Access DB# 146973

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Samuel Gilbert Examiner #: 70652 Date: 3/7/05
Art Unit: 3736 Phone Number ~~30~~ 272 4725 Serial Number: 10/788,791
Mail Box and Bldg/Room Location: Rnd 725 Results Format Preferred (circle): (PAPER) DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Expandable Cardiac Harness for Treating Congestive Heart Failure

Inventors (please provide full names): Lillup Lau; Bill Hartigan

Earliest Priority Filing Date: 3/10/2000

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

Method for placing a cardiac harness (jacket)

providing the harness;

creating an incision in the pericardium

sliding the cardiac harness through the incision and mounting it on the heart over the epicardial surface

Received 3/7/05 11:15a

****

STAFF USE ONLY	Type of Search		Vendors and cost where applicable
Searcher: Jeanne Hannigan	NA Sequence (#)		STN
Searcher Phone #: 23529	AA Sequence (#)		Dialog
Searcher Location:	Structure (#)		Questel/Orbit
Date Searcher Picked Up:	Bibliographic		Dr.Link
Date Completed:	Litigation		Lexis/Nexis
Searcher Prep & Review Time:	Fulltext		Sequence Systems
Clerical Prep Time:	Patent Family		WWW/Internet
Online Time:	Other		Other (specify)

PTO-1590 (8-01)

STIC Search Report
EIC 3700

STIC Database Tracking Number: 146973

TO: Samuel Gilbert
Location: RND 7a25
Art Unit: 3736

Case Serial Number: 10/788791

From: Jeanne Horrigan
Location: RND 8A34
Phone: 571-272-3529

jeanne.horrigan@uspto.gov

Search Notes

Attached are the search results for the minimally invasive procedure to wrap the epicardium in a jacket.

I eliminated items that dealt solely with valve replacement, but kept those that also discussed valve repair because I thought that perhaps valve repair involved wrapping something around the valve. I eliminated anything where the author mentioned the use of ministernotomy, sternotomy, or hemi-sternotomy as part of the procedure. I also eliminated anything that talked about mapping the heart or parts of it. If you want to see any of these, please let me know and I can retrieve them.

I tagged the references that seemed most relevant to me, but **I suggest that you review ALL of the results.**

Also attached is a search feedback form. Completion of the form is voluntary. Your completing this form would help us improve our search services.

I hope the attached information is useful. Please feel free to contact me if you have any questions or need additional searching on this application.

JH

sira
Search and Information Resources Administration

STIC Search Results Feedback Form

EIC 3700

Questions about the scope or the results of the search? Contact ***the EIC searcher or contact***:

John Sims, EIC 3700 Team Leader
RND 8B35, Phone 2-3507

Voluntary Results Feedback Form

- *I am an examiner in Workgroup:* ☐ *Example: 3730*
- *Relevant prior art **found**, search results used as follows:*
  - ☐ 102 rejection
  - ☐ 103 rejection
  - ☐ Cited as being of interest.
  - ☐ Helped examiner better understand the invention.
  - ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
  (journal articles, conference proceedings, new product announcements etc.)

- *Relevant prior art **not found**:*
  - ☐ Results verified the lack of relevant prior art (helped determine patentability).
  - ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to STIC/EIC3700 RND 8B31

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File 350:Derwent WPIX 1963-2005/UD,UM &UP=200518
         (c) 2005  Thomson Derwent
File 349:PCT FULLTEXT 1979-2002/UB=20050310,UT=20050303
         (c) 2005 WIPO/Univentio
File 348:EUROPEAN PATENTS 1978-2005/Feb W04
         (c) 2005 European Patent Office
Set     Items   Description
S1         75   AU='LAU L'
S2         31   AU='LAU LILIP'
S3          4   AU='HARTIGAN B' OR AU='HARTIGAN BILL'
S4         14   AU='HARTIGAN W' OR AU='HARTIGAN WILLIAM' OR AU='HARTIGAN W-
              ILLIAM M'
S5         37   AU='HARTIGAN W M'
S6         54   S1:S2 AND S3:S5
S7         18   CARDIAC()HARNESS
S8         18   S1:S5 AND S7
S9      78026   S HARNESS? OR JACKET?
S10      5957   PERICARDI?
S11    108501   HARNESS? OR JACKET?
S12         4   S1:S5 AND S10 AND S11
S13     33199   INCISION?
S14         2   S12 AND S13
S15         2   S12 NOT S14
S16         1   S1:S5 AND S10(3N)S13
S17         0   S16 NOT S12
S18         2   S1:S5 AND S10 AND S13
S19         0   S18 NOT S12

14/3,AB,IC/1     (Item 1 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
(c) 2005 WIPO/Univentio. All rts. reserv.

01124851
CARDIAC  HARNESS  DELIVERY DEVICE
DISPOSITIF D'IMPLANTATION DE HARNAIS DE SECURITE CARDIAQUE
Patent Applicant/Assignee:
  PARACOR MEDICAL INC, 610 N. Mary Avenue, Sunnyvale, CA 94085, US, US
    (Residence), US (Nationality)
Inventor(s):
   LAU Lilip , Los Altos, CA, US,
  WALLIN Joshua, 10358 Alpine Drive, Apt.1, Cupertino, CA 95014, US
Legal Representative:
  NAGY John S (agent), Fulwider Patton Lee & Utecht, LLP, Howard Hughes
    Center, 6060 Center Drive, Tenth Floor, Los Angeles, CA 90045, US,
Patent and Priority Information (Country, Number, Date):
  Patent:               WO 200445456 A2-A3 20040603 (WO 0445456)
  Application:          WO 2003US36476 20031117  (PCT/WO US03036476)
  Priority Application: US 2002427079 20021115
Designated States:
(Protection type is "patent" unless otherwise stated - for applications
prior to 2004)
  AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ (utility
  model) CZ DE (utility model) DE DK (utility model) DK DM DZ EC EE
  (utility model) EE EG ES FI (utility model) FI GB GD GE GH GM HR HU ID IL
  IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI
  NO NZ OM PG PH PL PT RO RU SC SD SE SG SK (utility model) SK SL SY TJ TM
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TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LU MC NL PT RO SE SI SK TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) BW GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Main International Patent Class: A61F-002/00
International Patent Class: A61B-017/00
Publication Language: English
Filing Language: English
Fulltext Word Count: 14229

English Abstract
The apparatus includes and elongate body (36) having a proximal portion and a distal portion. The body includes a cavity sized to contain a **cardiac harness** (42) in a compacted configuration and also includes a plurality of elongate push rods (40) movable with respect to the body. The **cardiac harness** is releasably connected to each of the push rods such that advancement of the push rods in a distal direction moves the **harness** from a compacted configuration, within the cavity, to an expanded configuration, outside the cavity. The apparatus also includes a releasing member (38) for releasing the connections between the push rods and the **harness** upon actuation of the releasing member by a user.

14/3,AB,IC/2 (Item 2 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00834821
EXPANDABLE **CARDIAC HARNESS** FOR TREATING CONGESTIVE **HEART** FAILURE
HARNAIS CARDIAQUE EXTENSIBLE PERMETTANT DE TRAITER L'INSUFFISANCE CARDIAQUE CONGESTIVE
Patent Applicant/Assignee:
PARACOR **SURGICAL** INC, P.O. Box 3068, Los Altos, CA 94024-3068, US, US (Residence), US (Nationality)
Inventor(s):
LAU Lilip , 1132 South Sage Court, Sunnyvale, CA 94087, US,
HARTIGAN Bill , 4547 Renato Court, Fremont, CA 94536, US
Legal Representative:
DELANEY Karoline A (agent), Knobbe, Martens, Olson and Bear, LLP, 620 Newport Center Drive, 16th Floor, Newport Beach, CA 92660, US,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200167985 A1 20010920 (WO 0167985)
Application: WO 2001US5017 20010216 (PCT/WO US0105017)
Priority Application: US 2000188282 20000310; US 2000634043 20000808
Designated States:
(Protection type is "patent" unless otherwise stated - for applications prior to 2004)
AE AG AL AM AT AT (utility model) AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ CZ (utility model) DE DE (utility model) DK DK (utility model) DM DZ EE EE (utility model) ES FI FI (utility model) GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SK (utility model) SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Main International Patent Class: A61F-002/00
Publication Language: English
Filing Language: English
Fulltext Word Count: 14378

English Abstract
A **cardiac harness** for treating congestive **heart** failure is disclosed. The **harness** applies elastic, compressive reinforcement on the left **ventricle** to reduce deleterious wall tension and to resist **shape**change of the **ventricle** during the mechanical **cardiac** cycle. Rather than imposing a dimension beyond which the **heart** cannot expand, the **harness** provides no hard limit over the range of diastolic expansion of the **ventricle**. Instead, the **harness** follows the contour of the **heart** throughout diastole and continuously exerts gentle resistance to stretch. Also disclosed is a **method** of delivering the **cardiac harness** to the **heart minimally invasively**.

15/3,AB,IC/1 (Item 1 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

01007625
HEART FAILURE TREATMENT DEVICE
DISPOSITIF DE TRAITEMENT DE L'INSUFFISANCE CARDIAQUE
Patent Applicant/Assignee:
PARACOR **SURGICAL** INC, 610 N. Mary Ave., Sunnyvale, CA 94085, US, US (Residence), US (Nationality)
Inventor(s):
LAU Lilip , Los Altos, CA, US,
PATEL Anuja, San Jose, CA, US
Legal Representative:
ALTMAN Daniel E (agent), Knobbe, Martens, Olson and Bear, LLP, 2040 Main Street, Fourteenth Floor, Irvine, CA 92614, US,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200337217 A1 20030508 (WO 0337217)
Application: WO 2002US35283 20021031 (PCT/WO US0235283)
Priority Application: US 2001335437 20011031
Designated States:
(Protection type is "patent" unless otherwise stated - for applications prior to 2004)
AE AG AL AM AT (utility model) AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ (utility model) CZ DE (utility model) DE DK (utility model) DK DM DZ EC EE (utility model) EE ES FI (utility model) FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK (utility model) SK SL TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SK TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Main International Patent Class: A61F-002/00
Publication Language: English
Filing Language: English

Fulltext Word Count: 12247

English Abstract
A **method** and apparatus for treating **heart** failure is configured to be placed about at least a portion of a patient's **heart** to apply a mild compressive force on the **heart** over a range of elastic deformation of the apparatus. The apparatus can be shifted to second range of deformation. In some embodiments, the apparatus is shifted to the second range of deformation by application of a stimulus or alteration of environmental conditions beyond a threshold level.

15/3,AB,IC/2 (Item 2 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00992590
CARDIAC HARNESS
DISPOSITIF DE TRAITEMENT DE L'INSUFFISANCE CARDIAQUE
Patent Applicant/Assignee:
PARACOR MEDICAL INC, 610 N. Mary Avenue, Sunnyvale, CA 94085, US, US (Residence), US (Nationality)
Inventor(s):
LAU Lilip , 610 N. Mary Avenue, Sunnyvale, CA 94085, US,
HARTIGAN William , 610 N. Mary Avenue, Sunnyvale, CA 94085, US,
PATEL Anuja, 610 N. Mary Avenue, Sunnyvale, CA 94085, US
Legal Representative:
NAGY John S (agent), Fulwider, Patton, Lee & Utech, LLP, Howard Hughes Center, 6060 Center Drive, Tenth Floor, Los Angeles, CA 90045, US,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200322176 A2-A3 20030320 (WO 0322176)
Application: WO 2002US29025 20020910 (PCT/WO US02029025)
Priority Application: US 2001322089 20010910
Designated States:
(Protection type is "patent" unless otherwise stated - for applications prior to 2004)
AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ (utility model) CZ DE (utility model) DE DK (utility model) DK DM DZ EC EE (utility model) EE ES FI (utility model) FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK (utility model) SK SL TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SK TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Main International Patent Class: A61F-002/00
Publication Language: English
Filing Language: English
Fulltext Word Count: 9440

English Abstract
A **cardiac harness** is configured to fit about a portion of a patient's **heart** so as to exert a compressive force on the **heart** during at least a portion of the **cardiac** cycle. The **harness** can be constructed of a plurality of individual modules assembled ex vivo or in vivo. The modules

can have different physical characteristics, such as having different compliance, and may or may not include spring hinges. Portions of a **cardiac harness** can be connected to each other using a coupling mechanism such as, for example, a zip coupler.

22/7,K/2 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX

016385318 **Image available**
WPI Acc No: 2004-543227/200452
Cardiac harness for treatment of congestive **heart** failure, sets change of minimum value of circumferential expansion within **operation** range, to yield change in circumferential load of specific value
Patent Assignee: LAU L (LAUL-I); PATEL A (PATE-I)
Inventor: LAU L; PATEL A
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20040147805	A1	20040729	US 2002346788	P	20020107	200452 B
			US 2003338934	A	20030107	
			US 2003698237	A	20031031	

Priority Applications (No Type Date): US 2002346788 P 20020107; US 2003338934 A 20030107; US 2003698237 A 20031031
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20040147805	A1		29	A61F-002/04	Provisional application US 2002346788 CIP of application US 2003338934

Abstract (Basic): US 20040147805 A1
NOVELTY - The **cardiac harness** is fitted around the patient's **heart** to resists expansion of **heart** by applying a compressive force. A section of **harness** exerts circumferential load as a function of expansion. The minimum value of the operating range of the expansion, is 20%. The change of 20% in circumferential expansion yields a change in circumferential load of not more than 0.066 lb/in.
USE - For treatment of congestive **heart** failure.
ADVANTAGE - The congestive **heart** failure is easily and reliably treated using simple **cardiac harness**. Enables the **heart** to more effectively pump the blood. Prevents remodeling of diseased **heart**.
DESCRIPTION OF DRAWING(S) - DESCRIPTION OF DRAWING - The figure shows a schematic view of the **heart** with **cardiac harness**.
heart (30)
cardiac harness (32)
spring elements (34)
strand (36)
apex portion (56)
pp; 29 DwgNo 1/18
Derwent Class: P31; P32
International Patent Class (Main): A61F-002/04
International Patent Class (Additional): A61B-019/00
Cardiac harness for treatment of congestive **heart** failure, sets change of minimum value of circumferential expansion within **operation** range, to yield change in circumferential load of specific value
International Patent Class (Main): A61F-002/04
International Patent Class (Additional): A61B-019/00

22/7,K/3 (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX

016090472 **Image available**
WPI Acc No: 2004-248348/200423
Cardiac harness for treating congestive **heart** failure, has panels made of different materials and positioned adjacent to each other and spaced apart such that there is no electrical conductivity between them
Patent Assignee: PARACOR MEDICAL INC (PARA-N); DUONG S (DUON-I); FISHLER M G (FISH-I); HONG J (HONG-I); LAU L (LAUL-I); MAR C (MARC-I); MEYER S (MEYE-I); PATEL A H (PATE-I)
Inventor: DUONG S; FISHLER M; HONG J; LAU L; MAR C; MEYER S; PATEL A; FISHLER M G; PATEL A H
Number of Countries: 105 Number of Patents: 004
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200421927	A2	20040318	WO 2003US28115	A	20030905	200423 B
US 20040143154	A1	20040722	US 2002409113	P	20020905	200449
			US 2003458991	P	20030328	
			US 2003656722	A	20030905	
AU 2003268549	A1	20040329	AU 2003268549	A	20030905	200459
US 20040249242	A1	20041209	US 2003458991	P	20030328	200481
			US 2004811245	A	20040325	

Priority Applications (No Type Date): US 2003458991 P 20030328; US 2002409113 P 20020905; US 2003656722 A 20030905; US 2004811245 A 20040325
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200421927	A2	E	70	A61F-002/00	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW
Designated States (Regional): AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

US 20040143154	A1	A61B-019/00	Provisional application US 2002409113
			Provisional application US 2003458991
AU 2003268549	A1	A61F-002/00	Based on patent WO 200421927
US 20040249242	A1	A61F-002/00	Provisional application US 2003458991

Abstract (Basic): WO 200421927 A2

NOVELTY - The **harness** has two panels made of different materials and positioned adjacent to each other. The panels are spaced apart such that there is no electrical conductivity circumferentially around the **harness**. The **harness** has a base end (134), an apex end (132), a right portion and a left portion. The distance between the apex end and the base end in the right portion is greater than that in the left portion.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a **method** of manufacturing a **cardiac harness** .

USE - Used for treating congestive **heart** failure.

ADVANTAGE - The **harness** does not have electrical conductivity circumferentially about it, thereby enabling electric current created between defibrillator paddles or electrodes applied to the **harness** to

pass through the **heart**.
DESCRIPTION OF DRAWING(S) - The drawing shows a schematic view of a **cardiac harness** disposed upon a schematically illustrated **heart**.
Spring units (34)
Apex portion (132)
Base portion (134)
Rings (200)
Nonconductive connectors (202)
Cardiac harness (220)
pp; 70 DwgNo 23/29
Derwent Class: P31; P32; P52; P78
International Patent Class (Main): A61B-019/00 ; A61F-002/00
International Patent Class (Additional): B21F-035/00; B44C-001/22

19/7,K/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.
016262610 **Image available**
WPI Acc No: 2004-420504/200439
Delivery apparatus for feeding **cardiac harness** onto **heart** of patient with congestive **heart** disease, has control assembly which can be actuated by user to release the connections between push rods and **cardiac harness**
Patent Assignee: PARACOR MEDICAL INC (PARA-N); LAU L (LAUL-I); WALLIN J (WALL-I)
Inventor: LAU L; WALLIN J
Number of Countries: 107 Number of Patents: 005
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200445456	A2	20040603	WO 2003US36476	A	20031117	200439 B
AU 2003291541	A1	20040615	AU 2003291541	A	20031117	200470
US 20040210104	A1	20041021	US 2002427079	P	20021115	200470
			US 2003715150	A	20031117	
			US 2004838002	A	20040503	
US 20050033322	A1	20050210	US 2002427079	P	20021115	200512
			US 2003715150	A	20031117	
			US 2004939721	A	20040913	
US 20050049611	A1	20050303	US 2002427079	P	20021115	200517
			US 2003715150	A	20031117	
			US 2004967955	A	20041018	

Priority Applications (No Type Date): US 2002427079 P 20021115; US 2003715150 A 20031117; US 2004838002 A 20040503; US 2004939721 A 20040913 ; US 2004967955 A 20041018
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200445456	A2	E	66	A61F-002/00	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW
Designated States (Regional): AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

AU 2003291541	A1		A61F-002/00	Based on patent WO 200445456

US 20040210104 A1 A61F-002/04 Provisional application US 2002427079

Cont of application US 2003715150

US 20050033322 A1 A61B-017/10 Provisional application US 2002427079

Cont of application US 2003715150

US 20050049611 A1 A61B-017/10 Provisional application US 2002427079

Cont of application US 2003715150

Abstract (Basic): WO 200445456 A2

NOVELTY - Elongate push rods (40) can be longitudinally moved with respect to an elongate main body. The push rods are advanced in a distal direction to move a **cardiac harness** (42) from a compacted configuration in the cavity of a housing (36) to an expanded configuration outside the cavity. A control assembly (38) can be actuated by a user to release the connections between the push rods and **cardiac harness** .

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a passage creating apparatus.

USE - For delivering a **cardiac harness** onto the **heart** of a patient with congestive **heart** disease.

ADVANTAGE - Allows releasing of **cardiac harness** from a remote location, and enables **minimally invasive** delivery of **cardiac harness** through a small **incision** in a patient.

DESCRIPTION OF DRAWING(S) - The figure shows the perspective view of **cardiac harness** delivery apparatus.

Shaft (34)
Housing (36)
Control assembly (38)
Push rods (40)
Cardiac harness (42)
pp; 66 DwgNo 1/34

Derwent Class: P31; P32
International Patent Class (Main): A61B-017/10 ; A61F-002/00 ; A61F-002/04
International Patent Class (Additional): A61B-017/00 ; A61F-013/00

22/7,K/5 (Item 5 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.
015594932 **Image available**
WPI Acc No: 2003-657087/200362

Use of expandable **cardiac harness** for treating congestive **heart** failure, involves fitting **cardiac harness** around **ventricle** of patient's **heart** and placing **cardiac harness** on patient's **heart** to extend over pad and coronary artery

Patent Assignee: HARTIGAN B (HART-I); LAU L (LAUL-I); PARACOR **SURGICAL** INC (PARA-N)
Inventor: HARTIGAN B; LAU L
Number of Countries: 001 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 6612978	B2	20030902	US 99171792	P	19991222	200362	B
			US 2000188282	P	20000310		
			US 2000634043	A	20000808		

			US 2001952074	A	20010910		
US 20020045799	A1	20020418	US 2000188282	P	20000310	200228	
			US 2000634043	A	20000808		
			US 2001952074	A	20010910		

Priority Applications (No Type Date): US 2001952074 A 20010910; US 99171792 P 19991222; US 2000188282 P 20000310; US 2000634043 A 20000808

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6612978	B2		48	A61B-019/00	Provisional application US 99171792 Provisional application US 2000188282 Cont of application US 2000634043
US 20020045799	A1			A61F-002/00	Provisional application US 2000188282 Cont of application US 2000634043

Abstract (Basic): US 6612978 B2

NOVELTY - The **method** involves fitting a **cardiac harness** (4) around the left **ventricle** (LV) or right **ventricle** (RV) of a patient's **heart** , and arranging the marginal edge of a pad in proximity but not impinging upon a coronary artery (26). The **cardiac harness** is placed on the **heart** so that the **harness** extends over the pad and coronary artery.

USE - For treating congestive **heart** failure.

ADVANTAGE - Interfaces mechanically with a patient's failing **heart** to improve its pumping function. Attenuates and potentially reverses the remodeling process that occurs in the left or right **ventricle** following myocardial infarction. Avoids the potential to create dangerous restrictive and constrictive conditions, similar to those seen in restrictive cardiomyopathy, constrictive peri carditis, and **cardiac** tamponade. Conforms and applies pressure to the **heart** as it fills and empties due to elasticity of **cardiac harness**. Includes hinges arranged to minimize or avoid foreshortening especially in longitudinal direction during circumferential expansion. Reinforces the **heart** without necessarily altering the **heart**'s sphericity to a great degree. Provides a passive elastic support of the **heart** and an interface to the **heart** that allows application of non-**cardiac** power to assist systolic **ventricular** function of the **heart**.

DESCRIPTION OF DRAWING(S) - The figures show the application of two protecting strips adjacent to a coronary artery deep to the **cardiac harness** and superficial to the **epicardium**, and the schematic diagram of a wire frame attached to the **cardiac harness** and surrounding the coronary artery.

Cardiac harness (4)
Coronary artery (26)
Wire frame (30)
Left **ventricle** (LV)
Right **ventricle** (RV)
pp; 48 DwgNo 16A, 17/36

Derwent Class: P31; P32

International Patent Class (Main): A61B-019/00 ; A61F-002/00

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File 155:MEDLINE(R) 1951-2005/Mar W2
         (c) format only 2005 The Dialog Corp.
File   5:Biosis Previews(R) 1969-2005/Mar W2
         (c) 2005 BIOSIS
File  73:EMBASE 1974-2005/Mar W2
         (c) 2005 Elsevier Science B.V.
File  34:SciSearch(R) Cited Ref Sci 1990-2005/Mar W2
         (c) 2005 Inst for Sci Info
File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
         (c) 1998 Inst for Sci Info
Set     Items   Description
S1       1449   AU=LAU L?
S2         59   AU=HARTIGAN B? OR AU=HARTIGAN W?
S3      73643   PERICARDI?
S4      87186   INCISION?
S5        776   S3 AND S4
S6          0   S1:S2 AND S5
S7      14000   HARNESS? OR JACKET?
S8          8   S1:S2 AND S7
S9          2   RD (unique items)
S10    112028   CONGESTIVE()HEART()FAILURE OR CHF
S11   1500007   SU/DE
S12         1   S1:S2 AND S10 AND S11
S13         1   S1:S2 AND S3
S14         8   S1:S2 AND S10
S15         0   S14 NOT (S8 OR S12 OR S13)

 9/9/1     (Item 1 from file: 5)
DIALOG(R)File   5:Biosis Previews(R)
(c) 2005 BIOSIS. All rts. reserv.
0014887031   BIOSIS NO.: 200400257788
Device for treating heart failure
AUTHOR:  Lau Lilip  (Reprint);  Hartigan William ; Patel Anuja
AUTHOR ADDRESS: 610 N. Mary Ave., Sunnyvale, CA, 94085, USA**USA
JOURNAL: Official Gazette of the United States Patent and Trademark Office
Patents  1281 (3): Apr. 20, 2004 2004
MEDIUM: e-file
PATENT NUMBER: US 6723041  PATENT DATE GRANTED: April 20, 2004 20040420
PATENT CLASSIFICATION: 600-37  PATENT COUNTRY: USA
ISSN: 0098-1133 _(ISSN print)
DOCUMENT TYPE: Patent
RECORD TYPE: Abstract
LANGUAGE: English
ABSTRACT: A cardiac  harness  is configured to fit about a portion of a
  patient's heart so as to exert a compressive force on the heart during at
  least a portion of the cardiac cycle. The  harness  can be constructed of
  a plurality of individual modules assembled ex vivo or in vivo. The
  modules can have different physical characteristics, such as having
  different compliance, and may or may not include spring hinges. Portions
  of a cardiac  harness  can be connected to each other using a coupling
  mechanism such as, for example, a zip coupler.
DESCRIPTORS:
  MAJOR CONCEPTS: Cardiovascular Medicine--Human Medicine, Medical Sciences
    ; Equipment Apparatus Devices and Instrumentation
  DISEASES: heart failure--heart disease, therapy
  MESH TERMS: Heart Failure, Congestive (MeSH)
```

METHODS & EQUIPMENT: **cardiac harness** --medical equipment; **heart** failure treating device--medical equipment
CONCEPT CODES:
12512 Pathology - Therapy
14506 Cardiovascular system - **Heart** pathology

9/9/2 (Item 2 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
(c) 2005 BIOSIS. All rts. reserv.
0014822503 BIOSIS NO.: 200400213260
Expandable **cardiac harness** for treating congestive **heart** failure
AUTHOR: Lau Lilip (Reprint); Hartigan Bill
JOURNAL: Official Gazette of the United States Patent and Trademark Office Patents 1280 (2): Mar. 9, 2004 2004
MEDIUM: e-file
PATENT NUMBER: US 6702732 PATENT DATE GRANTED: March 09, 2004 20040309
PATENT CLASSIFICATION: 600-37 PATENT ASSIGNEE: Paracor **Surgical**, Inc.
PATENT COUNTRY: USA
ISSN: 0098-1133 _(ISSN print)
DOCUMENT TYPE: Patent
RECORD TYPE: Abstract
LANGUAGE: English
ABSTRACT: A **cardiac harness** for treating congestive **heart** failure is disclosed. The **harness** applies elastic, compressive reinforcement on the left **ventricle** to reduce deleterious wall tension and to resist shape change of the **ventricle** during the mechanical **cardiac** cycle. Rather than imposing a dimension beyond which the **heart** cannot expand, the **harness** provides no hard limit over the range of diastolic expansion of the **ventricle**. Instead, the **harness** follows the contour of the **heart** throughout diastole and continuously exerts gentle resistance to stretch. Also disclosed is a **method** of delivering the **cardiac harness** to the **heart minimally invasively**.
DESCRIPTORS:
MAJOR CONCEPTS: Cardiovascular Medicine--Human Medicine, Medical Sciences ; Equipment Apparatus Devices and Instrumentation
DISEASES: congestive **heart** failure--**heart** disease, therapy
MESH TERMS: **Heart** Failure, Congestive (MeSH)
METHODS & EQUIPMENT: expandable **cardiac harness** --medical equipment
CONCEPT CODES:
12512 Pathology - Therapy
14506 Cardiovascular system - **Heart** pathology

12/6/1 (Item 1 from file: 73)
12796405 EMBASE No: 2004390396
Intra-mucosal acidosis as a predictor of **cardiac** outcome following abdominal aortic aneurysm **surgery**
2004

13/6/1 (Item 1 from file: 73)
12661151 EMBASE No: 2004247804
Unnecessary transfusions due to pseudothrombocytopenia
2004

File 155:MEDLINE(R) 1951-2005/Mar W2
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Set	Items	Description
S1	52964	'HEART FAILURE, CONGESTIVE' OR R2OR R3 OR 'CARDIOMYOPATHY, DILATED' OR 'DYSPNEA, PAROXYSMAL' OR 'EDEMA, CARDIAC'
S2	12407	'PERICARDIUM' OR DC='A10.615.789.470.' OR DC='A7.541.795.' OR 'EPICARDIUM'
S3	5480	'SURGICAL PROCEDURES, MINIMALLY INVASIVE' OR DC='E4.800.' - OR 'MINIMAL ACCESS SURGICAL PROCEDURES' OR 'MINIMAL SURGICAL - PROCEDURES' OR 'MINIMALLY INVASIVE SURGICAL PROCEDURES'
S4	5265	'THORACOSCOPY' OR DC='E1.370.388.250.840.' OR DC='E4.800.2-50.840.' OR DC='E4.928.752.' OR 'SURGICAL PROCEDURES, THORACO-SCOPIC' OR 'THORACOSCOPIC SURGICAL PROCEDURES' OR 'THORACIC S-URGERY, VIDEO-ASSISTED'
S5	3215	HARNESS? OR JACKET?
S6	0	S1 AND S2 AND S3:S4 AND S5
S7	0	S1 AND S2 AND S3:S4
S8	129	S2 AND S3:S4
S9	0	S5 AND S8
S10	**7**	**S2 AND S5**
S11	9345	SOCK OR GIRDLE OR SPLINT OR WRAP OR FABRIC OR LATISSIUMUS(-)DORSI
S12	71	S1 AND S11
S13	5	S2 AND S12
S14	**4**	**S13 NOT S10**

10/6/3
12760446 PMID: 10690287
Passive **ventricular** constraint amends the course of **heart** failure: a study in an ovine model of dilated cardiomyopathy.
Dec 1999

10/6/4
11266002 PMID: 8572787
Comparisons of **methods** of myocardial hypothermia for **cardiac** transplantation.
Feb 1996

10/6/5
08571432 PMID: 2785234
Comparison of myocardial temperatures with multidose cardioplegia versus single-dose cardioplegia and myocardial surface cooling during coronary artery bypass grafting.
May 1989

10/6/7
07530508 PMID: 3515882
Overview of MR of the **heart**--1986.
May 1986

10/7/6
DIALOG(R)File 155:MEDLINE(R)
(c) format only 2005 The Dialog Corp. All rts. reserv.
07810317 PMID: 3821143
Clinical comparisons of **methods** of myocardial protection.
Daily P O; Pfeffer T A; Wisniewski J B; Steinke T A; Kinney T B; Moores W

Y; Dembitsky W P
Journal of thoracic and cardiovascular **surgery** (UNITED STATES) Mar 1987
, 93 (3) p324-36, ISSN 0022-5223 Journal Code: 0376343
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
Subfile: AIM; INDEX MEDICUS
Currently, numerous **methods** are in use for myocardial hypothermia as a myocardial preservation modality for **cardiac operations**. During **cardiac** ischemia we have compared myocardial surface cooling with topical cold saline (Group I, N = 9), crystalloid cardioplegia plus topical cold saline (Group II, N = 8) and cardioplegia with a specially designed cooling **jacket** (Group III, N = 8) in patients undergoing aortic or mitral valve replacement, or both. Temperatures were assessed and recorded continuously in standardized locations for the right and left **ventricular epicardium** and endocardium. In Group I the rate of cooling was significantly slower than in the other two groups. Also, excessive gradients were developed across the left and right **ventricular** walls. In Group II the rate and depth of cooling were adequate and initial temperature gradients were eliminated. However, over the period of ischemia, significant rewarming occurred. In Group III temperatures were reduced rapidly and uniformly and maintained at or below 10 degrees C for the duration of the ischemic period. These differences are statistically significant (p less than 0.05). For optimal myocardial hypothermia, we recommend the following: separate cannulation of the superior and inferior venae cavae with caval snares; venting of the pulmonary artery (if inadequate, pulmonary vein occlusion or direct left atrial venting); induction of myocardial hypothermia with crystalloid or cold blood cardioplegia; and maintenance of hypothermia by the cooling **jacket** described herein. It is also desirable to continuously monitor temperatures of the right and left **ventricular** endocardial and **epicardial** surfaces.

14/6/2
13504434 PMID: 10475485
Heart booster: a **pericardial** support device.
Aug 1999

14/6/3
12084995 PMID: 9375606
Aortic and mitral valve replacement with reconstruction of the intervalvular fibrous body.
Nov 1997

14/6/4
11947993 PMID: 9229287
Pathologic findings of latissimus dorsi muscle graft in dynamic cardiomyoplasty: clinical implications.
Jun 1997

14/7/3
DIALOG(R)File 155:MEDLINE(R)

12084995 PMID: 9375606
Aortic and mitral valve replacement with reconstruction of the

intervalvular fibrous body.

David T E; Kuo J; Armstrong S
Division of Cardiovascular **Surgery**, Toronto Hospital, Ontario, Canada.

Journal of thoracic and cardiovascular **surgery** (UNITED STATES) Nov 1997 , 114 (5) p766-71; discussion 771-2, ISSN 0022-5223 Journal Code: 0376343
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
Subfile: AIM; INDEX MEDICUS

OBJECTIVE: The intervalvular fibrous body between the aortic and mitral valves can be damaged by infective endocarditis, degenerative calcification, or multiple previous **heart** valve **operations**, making double valve replacement difficult. We have managed this problem by approaching the aortic and mitral valves through the aortic root and the dome of the left atrium. After excising the aortic valve, the diseased fibrous body, and the mitral valve, we suture a properly tailored patch of Dacron fabric or bovine **pericardium** to the lateral and medial fibrous trigones and to the aortic root, reestablishing the aortic and mitral anuli. A prosthetic mitral valve is implanted and a separate patch is used to close the left atriotomy before implantation of a prosthetic aortic valve. This study was undertaken to determine the efficacy of this **operation**. **METHODS**: Forty-three patients underwent reconstruction of the intervalvular fibrous body during aortic and mitral valve replacement because of infective endocarditis with abscess in 14 patients, extensive calcification in 9, lack of fibrous tissue because of multiple previous **operations** in 10, and to enlarge the aortic and mitral anuli in 10. The group comprised 18 men and 25 women with a mean age of 58 +/- 12 years. Thirty-two patients had had one or more previous **heart** valve replacements. All patients were in New York **Heart** Association functional classes III and IV, and 9 patients were in shock before the **operation**. RESULTS: Seven operative deaths occurred (16%). Early prosthetic valve endocarditis developed in two patients and necessitated **reoperation**. Follow-up extended from 4 to 108 months, with a mean of 38 months. No patient was lost to follow-up. Six late deaths occurred. The actuarial survival at 6 years was 56% +/- 6%. A Doppler echocardiographic study revealed normal prosthetic valve function and anatomically intact anuli in all 30 long-term survivors. CONCLUSIONS: Reconstruction of the intervalvular fibrous body during aortic and mitral valve replacement is a satisfactory operative approach in patients with complex valve annular pathology.

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File 155:MEDLINE(R) 1951-2005/Mar W2
         (c) format only 2005 The Dialog Corp.
File   5:Biosis Previews(R) 1969-2005/Mar W2
         (c) 2005 BIOSIS
File  73:EMBASE 1974-2005/Mar W2
         (c) 2005 Elsevier Science B.V.
File  34:SciSearch(R) Cited Ref Sci 1990-2005/Mar W2
         (c) 2005 Inst for Sci Info
File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
         (c) 1998 Inst for Sci Info
File  94:JICST-EPlus 1985-2005/Jan W5
         (c)2005 Japan Science and Tech Corp(JST)
File  95:TEME-Technology & Management 1989-2005/Feb W1
         (c) 2005 FIZ TECHNIK
File  99:Wilson Appl. Sci & Tech Abs 1983-2005/Feb
         (c) 2005 The HW Wilson Co.
File 144:Pascal 1973-2005/Mar W1
         (c) 2005 INIST/CNRS
File   2:INSPEC 1969-2005/Feb W4
         (c) 2005 Institution of Electrical Engineers
File   6:NTIS 1964-2005/Mar W1
         (c) 2005 NTIS, Intl Cpyrght All Rights Res
File   8:Ei Compendex(R) 1970-2005/Mar W1
         (c) 2005 Elsevier Eng.  Info. Inc.
File  65:Inside Conferences 1993-2005/Mar W2
         (c) 2005 BLDSC all rts. reserv.
File  35:Dissertation Abs Online 1861-2005/Feb
         (c) 2005 ProQuest Info&Learning
Set     Items   Description
S1        467   (CARDIAC OR HEART OR PERICARDIAL OR EPICARDIAL OR VENTRICU-
              LAR)()(JACKET OR HARNESS OR CONSTRAINT OR SHAPE()CHANGE()DEVI-
              CE OR SOCK OR GIRDLE OR FABRIC OR WRAP OR SPLINT)
S2     774535   INCISION? ? OR INCISE? ? OR INCISING OR CUT OR CUTS OR CUT-
              TING
S3      26211   (MINIMALLY()INVASIVE OR MINIMAL()ACCESS)(1W)(SURGERY OR SU-
              RGERIES OR SURGICAL OR PROCEDURE? ? OR TECHNIQUE? ? OR OPERAT-
              ION? ?)
S4       4824   MINIMAL()SURGICAL()PROCEDURE? ? OR THORACOSCOPIC()(SURGERY
              OR PROCEDURE? ? OR OPERATION? ? OR TECHNIQUE? ?)
S5         19   S1 AND S2
S6          0   S1 AND S3:S4
S7          7   RD S5 (unique items)
S8          0   S7/2001
S9          3   S7/2002
S10         0   S7/2003
S11         2   S7/2004
S12         0   S7/2005
S13         2   S7 NOT S9:S11

13/7/1     (Item 1 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 2005 The Dialog Corp. All rts. reserv.
10192401   PMID: 8504505
  Increased  left  ventricular mass after thoracotomy and pericardiotomy. A
role for relief of  pericardial  constraint ?
  Tischler M D; Rowan M; LeWinter M M
```

Cardiology Unit, Medical Center Hospital of Vermont, Burlington 05401.
Circulation (UNITED STATES) Jun 1993, 87 (6) p1921-7, ISSN 0009-7322 Journal Code: 0147763
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed

BACKGROUND. Myocardial stretch and increased **ventricular** filling can lead to increased rates of myocardial protein synthesis. In animal studies, left **ventricular** mass increases after **pericardiectomy**, suggesting relief of a biologically meaningful restraining role and a resultant stimulus for growth. The present study was designed to test the hypothesis that combined thoracotomy and **pericardiotomy** leads to left **ventricular** hypertrophy in patients with normal left **ventricular** ejection fraction undergoing elective bypass **surgery**. **METHODS** AND RESULTS. Twenty-five patients with normal left **ventricular** ejection fraction without active myocardial ischemia underwent Doppler and quantitative two-dimensional echocardiography 1 day before and 6 weeks and 7 months after elective coronary artery bypass **surgery**. The **pericardium** was left widely **incised** in all patients. Left **ventricular** end-systolic volume, end-diastolic volume, stroke volume, ejection fraction, end-systolic circumferential wall stress, and mass were measured. Left **ventricular** end-diastolic volume index increased from 51 +/- 11 mL/m2 to 62 +/- 14 mL/m2 ($p < 0.05$) at 6 weeks and to 66 +/- 14 mL/m2 ($p < 0.05$ versus baseline, p = NS versus 6 weeks) at 7 months. Left **ventricular** mass index increased from 109 +/- 23 g/m2 to 127 +/- 24 g/m2 ($p < 0.05$) at 6 weeks and to 131 +/- 23 g/m2 ($p < 0.05$ versus baseline, p = NS versus 6 weeks) at 7 months. There were no changes in systolic or diastolic blood pressures, end-systolic circumferential wall stress, or end-systolic volume. CONCLUSIONS. Patients with normal left **ventricular** ejection fraction develop increases in left **ventricular** end-diastolic volume and mass after coronary artery bypass **surgery**. These findings support the hypothesis that the increase in left **ventricular** end-diastolic volume associated with thoracotomy and **pericardiotomy** leads to myocardial growth and an increase in left **ventricular** mass.

Record Date Created: 19930702
Record Date Completed: 19930702

13/7/2 (Item 2 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
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09173601 PMID: 2244438

The **pericardium** exerts constraint on the right **ventricle** during **cardiac surgery**.

Reich D L; Konstadt S N; Thys D M
Department of Anesthesiology, Mount Sinai Medical Center, New York.
Acta anaesthesiologica Scandinavica (DENMARK) Oct 1990, 34 (7) p530-3, ISSN 0001-5172 Journal Code: 0370270
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed

The right **ventricle** may be particularly susceptible to the effects of **pericardial** constraint . This study examined the effects of

pericardiotomy on right **ventricular** function. Twenty-four anesthetized patients with coronary artery disease, but without evidence of **pericardi**al pathology, were studied. Anesthesia consisted of fentanyl (100 micrograms.kg-1), diazepam, pancuronium, and 100% oxygen. The American Edwards REF-1 **Cardiac** Output Computer, rapid-response thermistor pulmonary arterial catheter, and a radial arterial catheter were used to measure hemodynamic variables. Baseline measurements were obtained with the sternum fully retracted. The measurements were then repeated following **pericardi**otomy by a midline **incision** . There were significant (P less than 0.05) changes in systolic arterial pressure (+4.5%), mean arterial pressure (+3.7%), systolic pulmonary arterial pressure (+11.8%), **cardiac** output (+9.1%), stroke volume (+6.9%), right **ventricular** end-diastolic volume (+7.6%), and right atrial pressure (-8.6%). In the current study, **pericardi**otomy augmented right **ventricular** diastolic filling and stroke volume, while the right atrial pressure decreased. These results support the concept of **pericardi**al constraint .

Record Date Created: 19910103
Record Date Completed: 19910103

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File 155:MEDLINE(R) 1951-2005/Mar W2
         (c) format only 2005 The Dialog Corp.
File   5:Biosis Previews(R) 1969-2005/Mar W2
         (c) 2005 BIOSIS
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         (c) 2005 Elsevier Science B.V.
File  34:SciSearch(R) Cited Ref Sci 1990-2005/Mar W2
         (c) 2005 Inst for Sci Info
File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
         (c) 1998 Inst for Sci Info
File  94:JICST-EPlus 1985-2005/Jan W5
         (c)2005 Japan Science and Tech Corp(JST)
File  95:TEME-Technology & Management 1989-2005/Feb W1
         (c) 2005 FIZ TECHNIK
File  99:Wilson Appl. Sci & Tech Abs 1983-2005/Feb
         (c) 2005 The HW Wilson Co.
File 144:Pascal 1973-2005/Mar W1
         (c) 2005 INIST/CNRS
File  65:Inside Conferences 1993-2005/Mar W2
         (c) 2005 BLDSC all rts. reserv.
File  35:Dissertation Abs Online 1861-2005/Feb
         (c) 2005 ProQuest Info&Learning
File   2:INSPEC 1969-2005/Feb W4
         (c) 2005 Institution of Electrical Engineers
File   6:NTIS 1964-2005/Mar W1
         (c) 2005 NTIS, Intl Cpyrght All Rights Res
File   8:Ei Compendex(R) 1970-2005/Mar W1
         (c) 2005 Elsevier Eng.  Info. Inc.
Set     Items   Description
S1    3697101   CARDIAC OR HEART OR PERICARDI?? OR EPICARDI?? OR VENTRICLE?
                ? OR VENTRICULAR
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S3      55665   SOCK? ? OR GIRDLE? ? OR WRAP? ? OR SPLINT? ?
S4     132365   INCISION? ? OR INCISE? ? OR INCISING
S5     646886   CUT OR CUTS OR CUTTING
S6      62775   MINIMALLY()INVASIVE OR MINIMAL()ACCESS OR THORACOSCOPIC
S7    5995533   SURGERY OR SURGERIES
S8    2698963   OPERATION? ?
S9    3098263   PROCEDURE? ?
S10   9185953   TECHNIQUE? ?
S11  17634810   METHOD? ?
S12         44   MINIMAL()SURGICAL()PROCEDURE? ?
S13      29884   S6(S)S7
S14       7446   S6(S)S8
S15      23922   S6(S)S9
S16      20086   S6(S)S10
S17      20782   S6(S)S11
S18      52364   S12:S17
S19         52   S1 AND S2:S3 AND S4:S5
S20          0   S18 AND S19
S21          7   S1 AND S2:S3 AND S18
S22          2   RD (unique items)
S23         52   S19 NOT S21
S24         29   RD (unique items)
S25          1   S24/2001
S26          4   S24/2002
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S27	2	S24/2003
S28	2	S24/2004
S29	0	S24/2005
S30	20	S24 NOT S25:S29
S31	**20**	**Sort S30/ALL/PY,A**
S32	111	S1()S2:S3
S33	0	4:S5 AND S32
S34	9	S4:S5 AND S32
S35	0	S34 NOT (S19 OR S21)
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S37	102	S32 NOT (S19 OR S21)
S38	43	RD (unique items)
S39	3	S38/2001
S40	5	S38/2002
S41	10	S38/2003
S42	2	S38/2004
S43	0	S38/2005
S44	23	S38 NOT S39:S42
S45	**23**	**Sort S44/ALL/PY,A**
S46	947299	IMPLANT?
S47	678	S1 AND (S6 OR S12) AND S46
S48	31849	S6/TI,DE OR S12/TI,DE
S49	429	S47 AND S48
S50	613	S1 AND S46 AND S18
S51	143	S50 AND S4:S5
S52	143	S51 NOT (S19 OR S21 OR S34 OR S44)
S53	121	RD (unique items)
S54	10	S53/2001
S55	9	S53/2002
S56	11	S53/2003
S57	15	S53/2004
S58	0	S53/2005
S59	76	S53 NOT S54:S58
S60	29	S1(S)S46(S)S18(S)S4:S5
S61	12	S59 AND S60
S62	**12**	**Sort S61/ALL/PY,A**
S63	113	S1(S)S46 AND S18 AND S4:S5
S64	56	(S59 AND S63) NOT S60
S65	56	RD (unique items)
S66	55	S18/TI,DE AND S64
S67	**55**	**Sort S66/ALL/PY,A**

22/7/2 (Item 2 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

12570074 PMID: 9892489

Dynamic aortomyoplasty: clinical experience and thoracoscopic surgery feasibility study.

Mesana T G; Mouly-Bandini A; Ferzoco S J; Collart F; Caus T; Reul R M; Monties J R; Schoen F J; Cohn L H

Brigham and Women's Hospital and Harvard Medical School, Boston, Massachusetts USA.

Journal of **cardiac surgery** (UNITED STATES) Jan 1998, 13 (1) p60-9, ISSN 0886-0440 Journal Code: 8908809

Publishing Model Print

Document type: Journal Article

Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
BACKGROUND: **Surgical procedures** using the latissimus dorsi (LD) muscle to assist chronic **heart** failure inflict major trauma on severely sick patients. A less **invasive** approach may prove beneficial. The aim of this article is to review our clinical and experimental approaches of dynamic aortomyoplasty (AMP) and emphasize the necessity to reorient **surgical technique** towards new directions and a less **invasive thoracoscopic** approach. MATERIALS AND **METHODS** : A clinical pilot study on dynamic descending AMP started in June 1995 and included four patients. Two of them could benefit from LD counterpulsation, surviving 6 months and 18 months. Following this clinical experience, we investigated, on an animal model, **minimally invasive thoracoscopic surgery** for this **procedure** . Twelve goats underwent endoscopic LD harvest and video-assisted aortic **wrap** , and were studied after **surgical** recovery from an anatomical and functional standpoint. RESULTS: Clinical AMP using open **techniques** provided extraaortic counterpulsation in NYHA Class IV patients contraindicated for other **surgical** therapies. However, **surgical technique** and strategy needed improvements for optimal **cardiac** assistance and better patient outcome. **Minimally invasive thoracoscopic surgery** was feasible and reproducible in goats, achieving improved anatomy and physiology as compared to the open **technique** in humans. When appropriate the **wrapping technique** and stimulation protocol were used, an optimal counterpulsation was demonstrated. We concluded that **thoracoscopic** AMP may provide a **minimally invasive** approach to **cardiac** assistance and thus, a new **surgical** option for patients presenting with chronic **heart** failure.
Record Date Created: 19990325
Record Date Completed: 19990325

31/7/5 (Item 5 from file: 73)
DIALOG(R)File 73:EMBASE
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02124474 EMBASE No: 1982165571
Late results of operative treatment of funnel chest
Arendrup H.; Hougaard K.; Axelsen F.; et al.
Thoraxkir. Afd. T, Odense Sygehus, 5000 Odense C Denmark
Ugeskrift for Laeger (UGESKR. LAEG.) (Denmark) 1982, 144/20 (1474-1477)
CODEN: UGLAA
DOCUMENT TYPE: Journal
LANGUAGE: DANISH SUMMARY LANGUAGE: ENGLISH
A follow-up investigation was undertaken of 52 patients submitted to **operation** for funnel chest by Sulamaa's **method**. The frequency of organic symptoms before and after **operation**, the postoperative complications, frequency of recurrence and the cosmetic results were recorded. Postoperative complications occurred in ten patients and consisted most frequently of infection and necrosis in the wound. In addition, pleural drains were introduced in 15 patients and re**operation** proved necessary in seven patients to fix the **splints** . On removal of the **splints** after 6 months, 98% of the patients were satisfied with the cosmetic results. The number of patients with organic symptoms was reduced from 56% to 21% after **operation**. On follow-up investigation, on an average 12 years after **operation**, the cosmetic result was assessed to be somewhat poorer as 71% stated that the result was good or acceptable while 29% stated that the

cosmetic result was poor. Seventy percent of the patients had developed complete or partial recurrence of the funnel chest deformity. Minor changes in the operative **technique** such as vertical skin **incision** , fixation of one end of the **splints** and preoperative pleural drainage in patients with pleural leakage are considered to be capable of reducing the frequency of complications and improving the cosmetic results. It is concluded that the indications for operative correction of funnel chest should be restricted considerably so that only patients with particularly pronounced funnel chest leading to dislocation of the **heart** and lungs and pronounced organic symptoms should be submitted to **operation** and, if so, between the ages of 6 and 13 years.

31/7/10 (Item 10 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 2005 The Dialog Corp. All rts. reserv.
09385195 PMID: 1708878
The construction of endocardial balloon arrays for **cardiac** mapping.
Chen T C; Parson I D; Downar E
Department of Medicine, University of Toronto, Ontario, Canada.
Pacing and clinical electrophysiology - PACE (UNITED STATES) Mar 1991, 14 (3) p470-9, ISSN 0147-8389 Journal Code: 7803944
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
The advent of multichannel recording systems has enabled clinical mapping to be performed on a beat-by-beat basis using multi-electrode arrays. **Surgical** ablation of **ventricular** arrhythmias generally requires endocardial mapping. Clinical usage has indicated that an inflatable balloon array is the most practical design and can obviate the need for ventriculotomy by a transatrial introduction in the deflated state. Successful experience with the left **ventricular** balloon led to the development of a right **ventricular** balloon array suitably configured to extend into the outflow tract. Custom moulds are used to create an appropriate balloon from liquid latex. Nylon cloth is **cut** from a cardboard pattern to fashion a stretchable **sock** to envelope the balloon. Electrodes are formed by stitching 2-mm silver beads to the balloon **sock** in a preconfigured pattern. Teflon-coated 31 G multi-strand stainless-steel wires 130 mm in length connect the electrode beads by solder to the multipin connectors for easy hookup to the amplifier inputs. Tygon tubing 0.53 cm in diameter fitted to the balloon allows inflation and pressure monitoring. This basic design has been successfully implemented for the last 6 years.
Record Date Created: 19910604
Record Date Completed: 19910604

45/7/13 (Item 13 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 2005 The Dialog Corp. All rts. reserv.
11370140 PMID: 8777480
Epicardial **sock** mapping following monophasic and biphasic shocks of equal voltage with an endocardial lead system.
Usui M; Callihan R L; Walker R G; Walcott G P; Rollins D L; Wolf P D; Smith W M; Ideker R E
Department of Medicine, University of Alabama at Birmingham 35294-0019,

USA.
Journal of cardiovascular electrophysiology (UNITED STATES) Apr 1996, 7 (4) p322-34, ISSN 1045-3873 Journal Code: 9010756
Contract/Grant No.: HL-42760; HL; NHLBI
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed

INTRODUCTION. The reason for the increased defibrillation efficacy of biphasic shocks over monophasic shock is not definitely known. **METHODS** AND RESULTS. In six anesthetized pigs, we mapped the **epicardium** after transvenous defibrillation shocks to compare the activation patterns following successful biphasic shocks with unsuccessful monophasic shocks of the same voltage. The **heart** was exposed and a 510-electrode **sock** with approximately 4-mm interelectrode spacing was pulled over the entire **ventricular epicardium** and sutured to the **pericardium**. Defibrillation catheters were placed in the right **ventricular** apex and in the superior vena cava. Paired monophasic 12 msec and biphasic 6/6 msec defibrillation shocks were given using an up-down protocol to keep shock strength between the defibrillation thresholds for the two waveforms so that the biphasic shock was successful while the monophasic shock was not. Activation fronts immediately following 60 paired shocks were recorded and analyzed by animated maps of the first derivative of the electrograms. The **ventricles** were divided into apical (I), middle (II), and basal (III) thirds, and early sites, i.e., the sites from which activation fronts first appeared on the **epicardium** following the shock, were grouped according to their location. Postshock intervals, i.e., the time from the shock until earliest **epicardial** activation occurred, were also determined. No ectopic activation fronts followed the shock in 20 biphasic episodes. In the other 40 paired episodes, the number of early sites was smaller after biphasic shocks than after monophasic shocks [monophasic: 198 (total), 3.3 +/- 0.9 (mean +/- SD) per shock episode; biphasic: 67, 1.1 +/- 1.0, $P < 0.05$]. For biphasic but not monophasic shocks, early sites were less likely to arise from the middle (II) and basal (III) thirds than from the apical third (I) [monophasic: I: 84 (42%), II: 68 (34%), III: 46 (23%); biphasic: I: 49 (73%), II: 10 (15%), III: 8 (12%), $P < 0.05$]. Postshock intervals were significantly shorter for monophasic shocks (54 +/- 14 msec) than for biphasic shocks (75 +/- 23 msec, $P < 0.05$). CONCLUSION. The decreased number of activation fronts and the longer delay following the shock for the earliest **epicardial** appearance of those activation fronts that do occur may be responsible for the increased defibrillation efficacy for biphasic shocks.

Record Date Created: 19960919
Record Date Completed: 19960919

45/7/14 (Item 14 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

0010893154 BIOSIS NO.: 199799527214
Latissimus dorsi muscle expansion prior to cardiomyoplasty
BOOK TITLE: Bakken Research Center Series; **Cardiac** bioassist
AUTHOR: Chachques Juan Carlos (Reprint); Tapia Michel; Radermecker Marc; Pellerin Michel; Carpentier Alain F
BOOK AUTHOR/EDITOR: Carpentier A F (Editor); Chachques J C (Editor); Grandjean P A (Editor)

AUTHOR ADDRESS: Dep. Cardiovascular **Surgery** Organ Transplantation, Hopital Broussais, Paris, France**France
SERIES TITLE: Bakken Research Center Series 11 p407-413 1997
BOOK PUBLISHER: Futura Publishing Co., Inc. {a}, 135 Bedford Road, Armonk, New York 10504-0418, USA
ISBN: 0-87993-647-9
DOCUMENT TYPE: Book Chapter
RECORD TYPE: Citation
LANGUAGE: English

45/7/15 (Item 15 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
(c) 2005 BIOSIS. All rts. reserv.
0010893152 BIOSIS NO.: 199799527212
Improved viability of latissimus dorsi muscle for **heart wrap**
BOOK TITLE: Bakken Research Center Series; **Cardiac** bioassist
AUTHOR: Keelen Patricia C (Reprint); Barker John H; Frank Johannes M; Anderson Gary L; Tobin Gordon R
BOOK AUTHOR/EDITOR: Carpentier A F (Editor); Chachques J C (Editor); Grandjean P A (Editor)
AUTHOR ADDRESS: Div. Plastic Reconstructive **Surgery**, Dep. **Surgery**, Univ. Louisville, Louisville, KY, USA**USA
SERIES TITLE: Bakken Research Center Series 11 p377-385 1997
BOOK PUBLISHER: Futura Publishing Co., Inc. {a}, 135 Bedford Road, Armonk, New York 10504-0418, USA
ISBN: 0-87993-647-9
DOCUMENT TYPE: Book Chapter
RECORD TYPE: Citation
LANGUAGE: English

45/7/17 (Item 17 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 2005 The Dialog Corp. All rts. reserv.
12597304 PMID: 10090062
Latissimus dorsi cardiomyoplasty: a chronic experimental porcine model. Feasibility study of cardiomyoplasty in Danish Landrace pigs and Gottingen minipigs.
Hansen S B; Nielsen S L; Christensen T D; Gravergaard A E; Baandrup U; Bille S; Hasenkam J M
Department of Cardiothoracic & Vascular **Surgery**, Aarhus University Hospital, Aarhus N, Denmark.
Laboratory animal science (UNITED STATES) Oct 1998, 48 (5) p483-9, ISSN 0023-6764 Journal Code: 1266503
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
Cardiomyoplasty is an experimental treatment for end-stage **heart** failure. We hypothesized that the porcine latissimus dorsi muscle (LDM) in an experimental porcine model is a suitable surrogate for a clinically relevant evaluation of this concept. Fourteen Danish Landrace (DL) pigs and six Gottingen minipigs (GM) were studied. The LDM was evaluated immediately after **surgical** dissection and in various phases: phase 1 (n = 4)--outcome of a partial vascular isolation (vascular delay), 2 to 3 weeks prior to **heart wrapping** in DL pigs; phase 2 (n = 6)--long-term flap survival of

nonstimulated LDM cardiomyoplasty in DL pigs; phase 3 (n = 6)--outcome of nonstimulated cardiomyoplasty in GM; phase 4--one DL pig had dynamic cardiomyoplasty performed and was subjected to low-intensity LDM stimulation for 8 months. Isolation of the LDM of DL pigs and GM as a pedicled graft had no **acute** deleterious impact on the global blood supply. In phase 1a, partial vascular isolation and in situ recovery of the LDM resulted in a muscle encapsulated in fibrotic tissue, which hampered a later **heart wrap** . In phase 1b, a less extensive dissection diminished fibrosis and allowed subsequent **wrapping**. In phase 2, after 6 weeks of nonstimulated LDM cardiomyoplasty, the LDM of DL pigs was viable, with excellent **heart**-muscle integration. In phase 3, the same **procedure** applied in GM yielded the same result as that in DL pigs, but with a higher success rate owing to the learning phase.
Record Date Created: 19990413
Record Date Completed: 19990413

45/7/18 (Item 18 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

12360043 PMID: 9671909
The effects of prosthetic cardiac binding and adynamic cardiomyoplasty in a model of dilated cardiomyopathy.
Oh J H; Badhwar V; Mott B D; Li C M; Chiu R C
Division of Cardiothoracic **Surgery**, McGill University, Montreal, Quebec, Canada.
Journal of thoracic and cardiovascular **surgery** (UNITED STATES) Jul 1998 , 116 (1) p148-53, ISSN 0022-5223 Journal Code: 0376343
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
OBJECTIVE: Because adynamic cardiomyoplasty, or **wrapping** skeletal muscle around the **heart**, had been shown to provide a girdling effect and delay progressive **ventricular** dilatation in **heart** failure, a similar girdling effect by the much simpler **procedure** of **cardiac** binding, using a prosthetic membrane to **wrap** the **heart**, was studied and compared with that of adynamic cardiomyoplasty. **METHODS**: Twenty-one dogs were divided into control, adynamic cardiomyoplasty, and **cardiac** binding groups. **Cardiac** dimension and hemodynamic studies were carried out before and 4 weeks after rapid pacing at 250 beats/min. For adynamic cardiomyoplasty, the left latissimus dorsi muscle was used for the **cardiac wrap** ; for **cardiac** binding, a Marlex sheet (C. R. Bard, Inc., Murray Hill, N.J.) was used. Serial two-dimensional echocardiography, right **heart** catheterization, and in the **cardiac** binding group, left **heart** catheterization were performed. RESULTS: Four weeks of rapid pacing induced severe **heart** failure and **cardiac** dilatation. The magnitude of **ventricular** dilatation at the end of rapid pacing was less in the **cardiac** binding group than in the control group and least in the adynamic cardiomyoplasty group. Left **ventricular** end-diastolic volume, end-systolic volume, and ejection fraction were 82.1 +/- 21.1 ml, 67.1 +/- 16.0 ml, and 17.5% +/- 5.8%, respectively, in the control group; 61.9. +/- 8.1 ml, 44.1 +/- 7.8 ml, and 30.1% +/- 3.6%, respectively, in the **cardiac** binding group; and 51.8 +/- 8.7 ml, 30.3 +/- 10.4 ml, and 27.0% +/- 4.0%, respectively, in the adynamic cardiomyoplasty group. CONCLUSIONS: Both adynamic cardiomyoplasty and **cardiac** binding reduced **cardiac** enlargement and functional deterioration after rapid pacing, with adynamic

cardiomyoplasty appearing to be more effective, perhaps because of the adaptive capabilities of the skeletal muscle **wrap**. However, **cardiac binding is a simpler and less invasive procedure,** which may be useful as an adjunct to prevent or delay progressive **ventricular** dilatation in **heart** failure.
Record Date Created: 19980803
Record Date Completed: 19980803

45/7/23 (Item 23 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

0012982500 BIOSIS NO.: 200100154339
Cardiac disease treatment **method**
AUTHOR: Alferness Clifton A; Sabbah Hani N (Reprint)
AUTHOR ADDRESS: Waterford, MI, USA**USA
JOURNAL: Official Gazette of the United States Patent and Trademark Office Patents 1236 (2): July 11, 2000 2000
MEDIUM: e-file
ISSN: 0098-1133
DOCUMENT TYPE: Patent
RECORD TYPE: Abstract
LANGUAGE: English
ABSTRACT: A **jacket** of biological compatible material has an internal volume dimensioned for an apex of the **heart** to be inserted into the volume and for the **jacket** to be slipped over the **heart**. The **jacket** has a longitudinal dimension between upper and lower ends sufficient for the **jacket** to surround a lower portion of the **heart** with the **jacket** surrounding a valvular annulus of the **heart** and further surrounding the lower portion to cover at least the **ventricular** lower extremities of the **heart**. The **jacket** is adapted to be secured to the **heart** with the **jacket** surrounding at least the valvular annulus and the **ventricular** lower extremities. The **jacket** is adjustable on the **heart** to snugly conform to an external geometry of the **heart** and assume a maximum adjusted volume for the **jacket** to constrain circumferential expansion of the **heart** beyond the maximum adjusted volume during diastole and to permit unimpeded contraction of the **heart** during systole.

62/7/3 (Item 3 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

10791089 PMID: 7993032
[New approach for implantation of automatic defibrillators using videothoracoscopy]
Nouvelle approche pour l' implantation des defibrillateurs automatiques utilisant la video-thoracoscopie.
Obadia J F; Lehot J J; Thevenet F; Kirkorian G; Touboul P; Chassignolle J F
Service de Chirurgie Cardio-Thoracique, Hospices Civils, Lyon.
Annales de cardiologie et d'angeiologie (FRANCE) Sep 1994, 43 (7) p384-8, ISSN 0003-3928 Journal Code: 0142167
Publishing Model Print
Document type: Journal Article ; English Abstract
Languages: FRENCH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
Nonthoracotomy lead systems are increasingly used in patients (pts) with implantable cardioverter defibrillator (ICD). In this setting, due to high energy requirements, a subcutaneous patch may be necessary in addition

to endocardial leads. However in some patients, high defibrillation threshold (DT) may persist leading to thoracotomy for **epicardia**l patch placement. In a preliminary experience, 3 patients with high DT (> 20 J) following endocardial lead system, underwent the insertion of a extra**pericardia**l patch under video- **thoracoscopic** control. A left subcostal **incision** extended to the left pleural cavity was performed. Using thoracoscopy the patch was positioned on the **pericardi**um , sutured and connected to the defibrillator. DTs were 10, 10 and 20 J respectively in our 3 patients. Postoperative course was uneventful. Thoracoscopy allows other **techniques** such as a stellectomy, which we performed in a 33 year old woman with long QT syndrome. Patients were reassessed after 8 days and 2 months. Termination of induced **ventricular** fibrillation was achieved with the same **minimal** energy levels used peroperatively. In conclusion, extra**pericardia**l patch insertion using thoracoscopy may help reduce DT in ICD patients with a non thoracotomy lead system. Comparison with other lead configurations requires further investigation.
Record Date Created: 19950110
Record Date Completed: 19950110

62/7/4 (Item 4 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

10705996 PMID: 8090289
[Implantation of automatic defibrillators by means of video-thoracoscopy. Authors' experience]
L'impianto dei defibrillatori automatici mediante video-toracoscopia. La nostra esperienza.
Obadia J F; Rescigno G; George M; Kirkorian G; Touboul P; Chassignolle J F
Service de Chirurgie Cardiothoracique et Vasculaire A, Hopital Cardiologique Louis Pradel, Lyon, France.
Minerva cardioangiologica (ITALY) May 1994, 42 (5) p197-201, ISSN 0026-4725 Journal Code: 0400725
Publishing Model Print
Document type: Journal Article ; English Abstract
Languages: ITALIAN
Main Citation Owner: NLM
Record type: MEDLINE; Completed
The implantable cardioverter-defibrillator represents an effective option for some potentially lethal **ventricular** arrhythmias. Nowadays defibrillation electrodes are often endoluminal only. In some patients, however, the presence of high defibrillation thresholds mandates the implantation of a sub**cut**aneous patch. If the sub**cut**aneous patch does not allow a sufficient decrease in defibrillation threshold, then two **epicardia**l patches are generally implanted by different **surgical** approaches. Nevertheless **surgical** trauma could be a serious hazard in unstable patients. In 6 patients in whom endoluminal electrodes did not allow a safe defibrillation threshold, an extra**pericardia**l patch has been implanted by means of a video- **thoracoscopic** approach: a left subcostal **incision** is performed and the subdiaphragmatic extraperitoneal space is reached; a patch electrode is then introduced into the left pleural cavity by blunt dissection of the diaphragm. This patch is positioned under **thoracoscopic** control in contact to the left **pericardia**l surface and fixed by single stitches sutures. The impulse generator is finally implanted into the subdiaphragmatic pocket. In all the patients the patch electrode configuration sufficiently decreased defibrillation thresholds. In one of the patients a stellectomy was **thoracoscopica**lly performed to

treat the long QT syndrome which was the cause of the **ventricular** fibrillation episodes. Defibrillation thresholds were confirmed after 8 day and 2 months postoperatively. In conclusion, the **thoracoscopic** implantation of an extra**pericardia**l patch has allowed a significant reduction of defibrillation thresholds, without recurring to a major **surgical procedure** .
Record Date Created: 19941017
Record Date Completed: 19941017

62/7/7 (Item 7 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

11466924 PMID: 8774826
Thoracoscopic approach to implantable cardioverter defibrillator patch electrode implantation .
Obadia J F; Kirkorian G; Rescigno G; el Farra M; Chassignolle J F; Touboul P
Department of Cardiothoracic **Surgery**, Hopital Cardiologique Louis Pradel, Lyon, France.
Pacing and clinical electrophysiology - PACE (UNITED STATES) Jun 1996, 19 (6) p955-9, ISSN 0147-8389 Journal Code: 7803944
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
Even if transvenous lead system for automatic implantable cardioverter defibrillators (ICDs) has been one of the main **surgical** advances in the recent past, its major limitation is the high defibrillation thresholds in some cases. Thus, an additional patch may be required and implanted either in a sub**cuta**neous position or in an **epicardia**l position. We describe another possibility: the implantation of extra**pericardia**l patch under video- **thoracoscopic** control. This new **technique** allows a deep implantation of the whole material without thoracotomy. Seven patients were included in our preliminary experience. During defibrillation threshold evaluation, two patients required 34 J with the single transvenous lead system, and five patients were not defibrillated with the single lead system; therefore, they required a 300-J external rescue shock. We decided to implant an additional patch in those seven patients with high defibrillation thresholds. This patch was inserted into the pleural cavity through a left subcostal **incision** . Under video thoracoscopy, it was positioned and stitched onto the **pericardium** . The defibrillation generator was then implanted through the left subcostal **incision** in a subdiaphragmatic space. As a result, preoperative defibrillation thresholds were significantly reduced (14.29 +/- 3.45 J, mean +/- SD) and remained stable during follow-up controls (eighth day and second month). Long-term follow-up (14 +/- 4.5 months) was uneventful, with an excellent tolerance for the patients. In conclusion, extra**pericardia**l implantation of defibrillation patches under video thoracoscopy is an easy **technique** that allows low defibrillation thresholds.
Record Date Created: 19961108
Record Date Completed: 19961108

62/7/10 (Item 10 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

12552793 PMID: 9866799
[**Minimally invasive surgery** with the Port-**Access method** . Preliminary experience]
La chirurgia mini-invasiva con la metodica Port-**Access**. Esperienza preliminare.
Vigano M; Minzioni G; Spreafico P; Pasquino S; Ceriana P; Locatelli A; Maurelli M
Divisione di Cattedra di Cardiochirurgia, Centro Ch. Dubost, Pavia.
Giornale italiano di cardiologia (ITALY) Nov 1998, 28 (11) p1225-9, ISSN 0046-5968 Journal Code: 1270331
Publishing Model Print
Document type: Journal Article ; English Abstract
Languages: ITALIAN
Main Citation Owner: NLM
Record type: MEDLINE; Completed
METHODS: Data from the initial experience of 40 patients operated on with the Port-**Access technique** are reported. Indication to **surgery** was mitral disease in 24 patients and coronary stenosis in 16 patients. Mean age was 52 years (range 32-75). **Operations** performed were: 8 mitral valvuloplasties, 16 valve replacements, 9 single CABG (associated with an MVR in one case), 1 double CABG, 6 triple CABG and one quadruple CABG. Coronary endarterectomy was performed in 5 patients and left atrial isolation was associated with MV **surgery** in 5 cases. RESULTS: There were no operative deaths and every patient was discharged after a mean postoperative stay of 5.5 days (range 3-30). Postoperative course was complicated in 7 patients: **surgical** revision was necessary in 4 patients due to bleeding (through the mini-thoracotomy **incision** in 3 cases), 1 pacemaker was implanted for A-V block, one retained pulmonary catheter was removed through the mini-thoracotomy without the aid of cardiopulmonary bypass and in one case, there was an emergency conversion to median sternotomy due to a **ventricular** fibrillation unresponsive to usual resuscitative maneuvers a few hours after **surgery**. Some of these complications can be ascribed to the learning phase of this new **technique** and should disappear as experience is increased. CONCLUSIONS: Port-**Access surgery** is a new **minimally invasive technique** that utilizes a cardiopulmonary bypass with femoral **access** and a specialized catheter system that provides endoaortic clamping, pulmonary artery venting and myocardial preservation with infusion of cardioplegic solution in the aortic bulb or in the coronary sinus. Major contraindications to this **technique** are iliac-femoral disease or severe dilatation of ascending aorta. The aim of the Port-**Access technique** is to combine the aesthetic and functional advantages of the **minimally invasive surgery** with the wide range of **surgical** options that cardiopulmonary bypass can afford (to operate on atrio**ventricular** valves and perform all the CABG that the patient need), without the limitations characteristic of the classic **minimally invasive** direct coronary artery bypass (MIDCAB) **technique** .
Record Date Created: 19990114
Record Date Completed: 19990114

62/7/12 (Item 12 from file: 73)
DIALOG(R)File 73:EMBASE

10766854 EMBASE No: 2000247232
Surgical treatment of coronary artery disease without cardiopulmonary bypass performed alone or as a hybrid revascularisation in high-risk patients

OPERACJE BEZ UZYCIA KRAZENIA POZAUSTROJOWEGO U CHORYCH ZWIEKSZONEGO RYZYKA OPERACYJNEGO Z UWZGLEDNIENIEM MODELU LECZENIA HYBRYDOWEGO

Bachowski R.; Domaradzki W.; Matuszewski M.; Szurlej D.; Kosmider J.; Szczesniak S.; Wos S.
R. Bachowski, II Katedra i Klinika Kardiochir., Slaska Akademia Medyczna, ul. Ziolowa 47, 40-635 Katowice Poland

Kardiologia Polska (KARDIOL. POL.) (Poland) 2000, 52/SUPPL. II (II24-II28)
CODEN: KARPA ISSN: 0022-9032
DOCUMENT TYPE: Journal; Article
LANGUAGE: POLISH SUMMARY LANGUAGE: ENGLISH; POLISH
NUMBER OF REFERENCES: 16

BACKGROUND: ' **Minimal**ly **invasive** **procedure** ' should mean not only smaller **surgical** **incision** but also diminished operative risk. Following numerous publications showing excellent results of **minimally** **invasive** coronary artery bypass grafting (MIDCABG) without the use of cardiopulmonary bypass in patients with coronary artery disease (CAD), recent interest has been focused on the applicability and safety of this **method** in high-risk patients. AIM: To assess results of MIDCABG performed in high-risk patients in our institution. **METHODS** : From March 1996 to December 1998 sixty high-risk patients with CAD underwent MIDCABG. The criteria for identification of high-risk patients included: (1) unstable angina requiring urgent **surgery** (51% of patients), (2) left **ventricular** ejection fraction <30% (35% of patients), (3) dissection or sudden closure of coronary artery during PTCA (12% of patients), (4) repeated **surgery** (8% of patients), (5) renal failure (8% of patients), (6) chronic obturative pulmonary disease (8% of patients), or (7) a history of stroke (8% of patients). The mean Cleveland Clinic clinical severity score, using the Higgins scale, was 6.2 which corresponds to an operative risk of 10%. In 80% of patients the **procedure** was performed through median sternotomy. A mean of 2.3 grafts were implanted . In 87% of patients complete revascularisation was achieved. In three (5%) patients PTCA of circumlex coronary artery was also performed. RESULTS: Three (5%) patients died in the early postoperative period. Other complications included low **cardiac** output syndrome treated with intraaortal balloon in 7 (11.6%) patients, respiratory insufficiency in one (1.6%) patient, and haemiparesis in one (1.6%) patient. All patients with complications survived. Fifty seven patients were discharged from the hospital in good condition. During ambulatory follow-up they remain free of anginal symptoms. CONCLUSIONS: The MIDCABG **procedure** without a cardiopulmonary bypass, performed by an experienced surgeon, is effective and safe in high-risk patients with CAD.

67/7/5 (Item 5 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

12096485 PMID: 9394596

[**Minimally** **invasive** approach for mitral valve, aortic valve, and atrial septal defect **surgery**]

Maehara T; Kokaji K; Yamano M; Shin H; Yozu R; Kawada S
Department of Cardiovascular **Surgery**, Kawasaki City Hospital, Japan.

Zasshi Journal. Nihon Kyobu Geka Gakkai (JAPAN) Oct 1997, 45 (10) p1778-81, ISSN 0369-4739 Journal Code: 19130180R
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Document type: Case Reports; Journal Article ; English Abstract
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Main Citation Owner: NLM

Record type: MEDLINE; Completed
We successfully introduced **minimally invasive cardiac surgery** (MICS) to japan by performing **thoracoscopic** clipping of a patent ductus arteriosus in July 1992. MICS via a small right parasternal **incision** (Cosgrove **procedure**) was applied for one patients with severe rheumatic mitral stenosis, one with severe aortic regurgitation, and one with atrial septal defect (ASD). Mitral valve replacement (MVR), aortic valve replacement (AVR), and direct closure of the ASD were performed successfully by MICS for the the first time in Japan. All three patients required no blood transfusion and had no complications postoperatively, being discharged from hospital at 15, 13, and 9 days after their **operations** . MICS was satisfactory for mitral valve and ASD **operations** , but AVR by this approach took much longer than by standard midline sternotomy due to the poor **surgical** field obtained via the small right parasternal **incision** . A **minimally invasive** approach for **surgery** on the aortic valve and ascending aorta may require transection of the sternum or some other **method** . MICS has several advantages, including less trauma and pain, faster patient recovery, shorter ICU and hospital stays, a lower cost, and a better cosmetic outcome. Therefore, it is better for the patient when it is feasible. MICS should develop and be applied to more patients with cardiovascular disease in the future. Some of the standard cardiovascular **operations** may soon be replaced by MICS.
Record Date Created: 19980120
Record Date Completed: 19980120

67/7/7 (Item 7 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 2005 The Dialog Corp. All rts. reserv.
12056692 PMID: 9352947
Minimally invasive mitral valve **surgery** .
Fann J I; Pompili M F; Burdon T A; Stevens J H; St Goar F G; Reitz B A
Department of Cardiothoracic **Surgery**, Stanford University School of Medicine, CA 94305, USA.
Seminars in thoracic and cardiovascular **surgery** (UNITED STATES) Oct 1997, 9 (4) p320-30, ISSN 1043-0679 Journal Code: 8917640
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
Because of advances in video-assisted general and thoracic **surgery**, **minimally invasive cardiac surgery** has been successfully performed experimentally and clinically. Recently described **techniques** of less **invasive** mitral valve **surgery** include limited right thoracotomy, parasternal **incision** , and partial sternotomy. These **methods** have been coupled to video-assisted thoracoscopy to further decrease the **incision** size. Cardiopulmonary bypass (central or peripheral) and either hypothermic fibrillatory arrest or cardioplegic arrest are used. The Port-**Access** approach is a catheter-based system that provides effective cardiopulmonary bypass, cardioplegic arrest, and **ventricular** decompression. At Stanford University, 10 Port-**Access** mitral valve **procedures** were performed between May 1996 and January 1997. The mean age of the patients (eight men and two women) was 54 +/- 7 (SD) years. Nine patients had severe mitral regurgitation from myxomatous degeneration, and one suffered from severe mitral regurgitation and moderate mitral stenosis from a rheumatic etiology. Five patients underwent mitral valve replacement, and five

underwent mitral valve repair. There was no operative mortality. The mean **incision** length was 8.1 +/- 2.5 cm. The aortic "cross-clamp" time was 99 +/- 22 minutes, and the cardiopulmonary bypass time was 151 +/- 52 minutes. The total hospitalization averaged 4.3 +/- 1.4 days. One patient developed third-degree atrio**ventricular** block, requiring a prolonged stay in the intensive care unit and pacemaker placement; the same patient was found to have a perivalvular leak on follow-up, requiring re**operation** at 3 months. Port-**Access** mitral valve **procedures** can be performed safely with satisfactory outcome. Greater clinical experience and long-term follow-up are necessary to fully assess these less **invasive techniques** of mitral valve **surgery** .

Record Date Created: 19971205
Record Date Completed: 19971205

67/7/8 (Item 8 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 2005 The Dialog Corp. All rts. reserv.
12055810 PMID: 9351710

Minimally **invasive cardiac** valve **surgery** improves patient satisfaction while reducing costs of **cardiac** valve replacement and repair.

Cohn L H; Adams D H; Couper G S; Bichell D P; Rosborough D M; Sears S P; Aranki S F

Brigham and Women's Hospital, Department of **Surgery**, Harvard Medical School, Boston, Massachusetts 02215, USA.

Annals of **surgery** (UNITED STATES) Oct 1997, 226 (4) p421-6; discussion 427-8, ISSN 0003-4932 Journal Code: 0372354

Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed

OBJECTIVE: This study compares the quality of valve replacement and repair performed through **minimal**ly **invasive incisions** as compared to the standard **operation** for aortic and mitral valve replacement. SUMMARY BACKGROUND DATA: With the advent of **minimal**ly **invasive** laparoscopic approaches to orthopedic **surgery** , urology, general **surgery** , and thoracic **surgery** , it now is apparent that standard **cardiac** valve **operations** can be performed through very small **incisions** with similar approaches. **METHODS** : Eighty-four patients underwent **minimal**ly **invasive** aortic (n = 41) and **minimal**ly **invasive** mitral valve repair and replacement (n = 43) between July 1996 and April 1997. Demographics, **procedures** , operative **techniques** , and postoperative morbidity and mortality were calculated, and a subset of the first 50 patients was compared to a 50-patient cohort who underwent the same **operation** through a conventional median sternotomy. Demographics, postoperative morbidity and mortality, patient satisfaction, and charges were compared. RESULTS: Of the 84 patients, there were 2 operative mortalities both in class IV aortic patients from multisystem organ failure. There was no operative mortality in the patients undergoing mitral valve replacement or repair. The **operations** were carried out with the same accuracy and attention to detail as with the conventional **operation** . There was **minimal** postoperative bleeding, cerebral vascular accidents, or other major morbidity. Groin cannulation complications primarily were related to atherosclerotic femoral arteries. A comparison of the **minimal**ly **invasive** to the conventional group, although operative time and ischemia time was

higher in **minimally invasive** group, the requirement for erythrocytes was significantly less, patient satisfaction was significantly greater, and charges were approximately 20% less than those in the conventional group. CONCLUSIONS: **Minimally invasive** aortic and mitral valve **surgery** in patients without coronary disease can be done safely and accurately through small **incisions** . Patient satisfaction is up, return to normality is higher, and requirement for postrehabilitation services is less. In addition, the charges are approximately 20% less. These results serve as a paradigm for the future in terms of valve **surgery** in the managed care environment.
Record Date Created: 19971113
Record Date Completed: 19971113

67/7/9 (Item 9 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

12604754 PMID: 10225184
Port-**Access cardiac surgery** using endovascular cardiopulmonary bypass: theory, practice, and results.
Reichenspurner H; Welz A; Gulielmos V; Boehm D; Reichart B
Department of **Cardiac Surgery**, Ludwig-Maximilians-University Munich, Germany.
Journal of **cardiac surgery** (UNITED STATES) Jul 1998, 13 (4) p275-80, ISSN 0886-0440 Journal Code: 8908809
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
BACKGROUND: Reduction of **surgical** trauma is the aim of **minimally invasive cardiac surgery** . This can be achieved by reducing the size of the **incision** or by eliminating or changing the cardiopulmonary bypass system. However, certain **cardiac surgical procedures** , such as valvular **surgery** and complex multivessel coronary artery **surgery** , are not feasible without the use of cardiopulmonary bypass. Therefore endovascular cardiopulmonary bypass may allow reduction of **surgical** trauma for these patients. **METHODS** : Since its first application in April 1995, more than 1100 **procedures** have been performed worldwide using the EndoCPB endovascular cardiopulmonary bypass system. The authors' experience consists of 60 Port-**Access** coronary artery bypass grafting **procedures** , 34 Port-**Access** mitral valve **procedures** (18 replacements, 16 repairs), 5 atrial septal defect closures, and 3 atrial myxoma removals. RESULTS: The patient survival rate was 99%, the incidence of perioperative stroke was 1%, and the incidence of aortic dissection was 1%. In the Port-**Access** mitral valve and atrial septal defect patients, the survival rate was 100% with no peri- or postoperative complications. Peri- and postoperative transesophageal echocardiography revealed no perivalvular leak or remaining mitral insufficiency after valve repair. CONCLUSIONS: The EndoCPB endovascular cardiopulmonary bypass system allows the application of true Port-**Access minimally invasive cardiac surgery** in **procedures** that require the use of cardiopulmonary bypass and cardioplegic arrest. Sternotomy and its potential complications can be avoided, and the **surgical procedures** can be performed safely on an empty, arrested **heart** with adequate myocardial protection.
Record Date Created: 19990618
Record Date Completed: 19990618

67/7/11 (Item 11 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

12592495 PMID: 10063494
[**Minimal**ly **invasive cardiac surgery** --the efficacy of right parasterna approach]
Sawa Y; Matsuda H
First Department of **Surgery**, Osaka University Medical School, Suita, Japan.
Nippon Geka Gakkai zasshi (JAPAN) Dec 1998, 99 (12) p825-30, ISSN 0301-4894 Journal Code: 0405405
Publishing Model Print
Document type: Clinical Trial; Controlled Clinical Trial; Journal Article ; English Abstract
Languages: JAPANESE
Main Citation Owner: NLM
Record type: MEDLINE; Completed
The recent concepts of **minimal**ly **invasive surgery** have affected even cardiovascular **surgery** . Especially, the desire to lessen **incision**al pain and hospital stay has made **minimal**ly **invasive cardiac surgery** (MICS) desirable. However, its efficacy is still controversial. To investigate this goal, we assessed the efficacy of avoidance of median sternotomy through right parasternal approach in view of the postoperative bleeding, % transfusion, postoperative intubation period, degree of **incision**al pain and serum level of cytokines. Patients with mitral valve disease or atrial septal defects were divided into the MICS (M) group and the control (C) group. In the M group, **operations** were performed through right parasternal **incision** under cardiopulmonary bypass (CPB) instituted by placing a venous cannula directly into superior vena cava and arterial and the other venous cannulae into femoral artery and vein. On the other hand, in the C group, **operations** were performed through median sternotomy under conventional CPB. There were no significant differences in CPB and AXC time between two groups. The M group showed significantly lower value in the postoperative bleeding volume, % transfusion, postoperative intubation time. Patients in the M group showed higher satisfaction of small **incision** as compared with those in the C group. Serum level of IL-8 after CPB was significantly lower in the M group than in the C group. These results suggested that MICS for mitral disease or ASD appears to be less **invasive** when median sternotomy is avoided. This suggest that MICS is a promising and contributed approach for open **heart surgery** to improve the QOL of the patients.
Record Date Created: 19990423
Record Date Completed: 19990423

67/7/19 (Item 19 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

12498932 PMID: 9808999
Early experience of **minimal**ly **invasive** valve **surgery** .
Iedokoro Y; Hioki M; Mishima T; Kawamura J; Yamagishi S; Orii K; Yamashita Y; Hirata T; Masuda S; Tanaka S
Department of **Surgery**, Nippon Medical School Second Hospital, Kanagawa, Japan.
Nippon Ika Daigaku zasshi (JAPAN) Oct 1998, 65 (5) p413-5, ISSN 0048-0444 Journal Code: 7505726

Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
The right parasternal **incision** can be used for replacing or repairing **cardiac** valves. A specialized retractor system produces excellent...
; Adult; Aged; Aged, 80 and **over** ; **Heart** Valve Prosthesis Implantation --methods--MT; Humans; Middle Aged; Sternum; Surgical Procedures, Minimally Invasive--methods--MT

34/7/4 (Item 1 from file: 73)
DIALOG(R)File 73:EMBASE

06939154 EMBASE No: 1997223665
Cardiac binding in experimental **heart** failure: Invited commentary
Christlieb I.Y.
Dr. I.Y. Christlieb, Department of Surgery, MCP/Hahnemann School of Medicine, Allegheny Univ. of the Hlth Sciences, 320 E North Avenue, Pittsburgh, PA 15212-4772 United States
Annals of Thoracic Surgery (ANN. THORAC. SURG.) (United States) 1997, 64/1 (85)
CODEN: ATHSA ISSN: 0003-4975
PUBLISHER ITEM IDENTIFIER: S0003497597003500
DOCUMENT TYPE: Journal; Note
LANGUAGE: ENGLISH

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File 149:TGG Health&Wellness DB(SM) 1976-2005/Mar W1
         (c) 2005 The Gale Group
Set     Items   Description
S1      95419   HEART OR PERICARDIUM OR EPICARDIUM OR VENTRICLE
S2       4931   INCISION? ? OR INCISE? ? OR INCISING
S3      49063   CUT OR CUTS OR CUTTING
S4      68882   AROUND
S5     192273   OVER
S6      79904   COVER???
S7      22701   SURROUND???
S8        702   ENCASE? ? OR ENCASING
S9      21700   JACKET? ? OR HARNESS OR HARNESSES OR SOCK? ? OR GIRDLE? ? -
             OR WRAP? OR SPLINT? ? OR CONSTRAINT? ?
S10        25   GIRDLING
S11         0   CARDIAC BINDING
S12     19426   BINDING
S13       545   (S4:S8 OR S10 OR S12)(1W)S1
S14        17   S2:S3(S)S13
S15         0   S9(S)S14
S16        17   RD S14 (unique items)
S17         5   S16/2001:2005
S18        12   S16 NOT S17
S19        12   Sort S18/ALL/PD,A

 19/3,K/4
DIALOG(R)File 149:TGG Health&Wellness DB(SM)
(c) 2005 The Gale Group. All rts. reserv.
01301464     SUPPLIER NUMBER: 11001545    (USE FORMAT 7 OR 9 FOR FULL TEXT)
Cardiac myoplasty with the latissimus dorsi muscle. (editorial)
The Lancet, v337, n8754, p1383(2)
June 8, 1991
DOCUMENT TYPE: editorial   PUBLICATION FORMAT: Magazine/Journal   ISSN:
0099-5355  LANGUAGE: English  RECORD TYPE: Fulltext; Abstract
TARGET AUDIENCE: Professional
WORD COUNT:   1129    LINE COUNT:  00121
...     sternotomy. There is a further delay while the vascular supply
recovers and some adhesions form around the heart [2] before training
of the muscle begins. Perioperative mortality was about 20% for the 62...

 19/3,K/6
DIALOG(R)File 149:TGG Health&Wellness DB(SM)
(c) 2005 The Gale Group. All rts. reserv.
01678755     SUPPLIER NUMBER: 19150045    (USE FORMAT 7 OR 9 FOR FULL TEXT)
A gentler approach to heart surgery: after decades of running bone saws
  through rib cages, surgeons are finding less invasive ways to do their
  work.
Cowley, Geoffrey; Underwood, Anne
Newsweek, v129, n9, p73(1)
March 3, 1997
PUBLICATION FORMAT: Magazine/Journal   ISSN: 0028-9604  LANGUAGE: English
RECORD TYPE: Fulltext; Abstract  TARGET AUDIENCE: Consumer
WORD COUNT:   746    LINE COUNT:  00063
...     connections are made, many valve and artery repairs can be
performed through a three-inch incision over the heart , At most, the
surgeons may slip a few probes between the ribs or clip a...
```

1: Ann Thorac Surg. 1997 Jul;64(1):81-5.

Cardiac binding in experimental heart failure.

Vaynblat M, Chiavarelli M, Shah HR, Ramdev G, Aron M, Zisbrod Z, Cunningham JN Jr.

Division of Cardiothoracic Surgery, State University of New York-Health Science Center at Brooklyn 11203, USA.

BACKGROUND: Cardiomyoplasty is a potential therapy for heart failure. It benefits are attributed to systolic augmentation (dynamic cardiomyoplasty) and prevention of cardiac dilatation (static cardiomyoplasty). To evaluate the static component, we used an artificial membrane for cardiac binding in a canine model of heart failure. METHODS: Intracoronary doxorubicin was administered weekly for 4 weeks to induce heart failure in 10 dogs, each of which was assigned to one of two treatment groups: (1) no treatment, or (2) cardiac binding. Hemodynamic data were obtained at operation and at 7 weeks after operation. Echocardiography was performed weekly. RESULTS: Left ventricular end-diastolic pressure and diameter, and right ventricular end-diastolic diameter increased in group 1 (from 9.6 +/- 6.1 to 19.6 +/- 2.3 mm Hg, p = 0.009; from 3.9 +/- 0.4 to 5 +/- 0.3 cm, p = 0.0013; and from 1.6 +/- 0.2 to 1.9 +/- 0.3 cm, p = 0.0036, respectively). Ejection fraction fell in group 1 from 0.60 +/- 0.10 to 0.40 +/- 0.04 (p = 0.0009) and in group 2 from 0.56 +/- 0.02 to 0.40 +/- 0.04 (p = 0.0001), but the difference between groups was not significant. CONCLUSION: Cardiac binding reduces the ventricular dilatation associated with heart failure without exacerbating left ventricular dysfunction.

PMID: 9236339 [PubMed - indexed for MEDLINE]

Note: Performing your original search, ***cardiac binding***, in PubMed will retrieve *15142* citations.

☐ 1: Ann Thorac Surg. 2000 Feb;69(2):429-34. Related Articles, Link

Comment in:
- Ann Thorac Surg. 2001 May;71(5):1754-5.

ELSEVIER SCIENCE FULL-TEXT ARTICLE

Composite cardiac binding in experimental heart failure.

Shah HR, Vaynblat M, Salciccioli L, Impellizzeri P, Cunningham JN Jr, Chiavarelli M.

Department of Surgery and Medicine, State University of New York Health Science Center, Brooklyn 11203, USA.

BACKGROUND: Composite cardiac binding consists of wrapping the heart with a synthetic membrane and a pericardial interposition. The goal of the present study was to apply composite cardiac binding to a canine model of heart failure. METHODS: Twenty dogs were randomized to 2 groups: untreated heart failure (group 1, n = 13) and heart failure pretreated by composite cardiac binding (group 2, n = 7). They received a total dose of 1 mg x kg(-1) of intracoronary doxorubicin over 4 weeks. Hemodynamic data were obtained at weeks 0, 7, and 12. All animals were followed up with weekly echocardiography for 12 weeks. RESULTS: Survival in group 1 was 54% and in group 2 was 100% at week 12 (p = 0.0438). Left ventricular end-diastolic pressure increased by 153% in group 1 and by 59% in group 2 (p = 0.0395) at week 12. Ejection fraction decreased by 27% in group 1 and by 19% in group 2 (p = 0.4401) at week 12. CONCLUSIONS: Composite cardiac binding significantly prolongs survival and attenuates left ventricular dilatation and the increase in left ventricular end-diastolic pressure associated to chronic heart failure. Further evaluation in established heart failure is needed. Composite cardiac binding may be used for the prevention of recurrent dilatation following reduction ventriculoplasty.

PMID: 10735676 [PubMed - indexed for MEDLINE]

1: Ann Thorac Surg. 1997 Jun;63(6):1706-11; discussion 1711-2.

Effects of wrapping tightness on acute cardiac function in dynamic cardiomyoplasty.

Takagi H, Hirose H, Sasaki E, Bando M, Furuzawa Y, Murakawa S, Mori Y.

First Department of Surgery, Gifu University School of Medicine, Japan.

BACKGROUND: It has not been clarified how tightly the heart should be wrapped for maximal augmentation of cardiac function in cardiomyoplasty. METHODS: Hearts in acute failure induced by propranolol were wrapped with the left latissimus dorsi muscle, loosely (loose CMP), moderately (moderate CMP), and tightly (tight CMP) in each of 5 pigs. To measure the pressure between the latissimus dorsi muscle and the left ventricle (LV), a Millar pressure catheter with a latex balloon was placed on the anterior wall of the LV. Left ventricular wall tension was calculated according to Laplace's law, using the difference between the LV pressure and the balloon pressure. RESULTS: In the loose CMP, moderate CMP, and tight CMP groups, the mean balloon pressures during unassisted beats were 8.2, 10.4, and 13.2 mm Hg, respectively. During unassisted beats, the mean LV wall tension values were 38,683, 29,938 ($p < 0.05$ versus loose CMP), and 26,652 ($p < 0.05$ versus loose CMP) dynes/cm, respectively, the peak LV pressures were 76.8, 73.8, and 65 ($p < 0.05$ versus loose CMP) mm Hg, respectively, and the stroke volumes were 12.8, 9.2, and 8.5 ($p < 0.05$ versus loose CMP) mL, respectively. During assisted beats, the mean LV wall tension values were 20,059, 11,290, and 7,893 ($p < 0.05$ versus loose CMP) dynes/cm, respectively, the peak LV pressures were 94.1, 98.1, and 92.0 mm Hg, respectively, and the stroke volumes were 13.8, 11.6, and 9.4 ($p < 0.05$ versus loose CMP) mL, respectively. CONCLUSIONS: During unassisted beats, tight CMP (13 mm Hg) had the advantage of diminishing LV wall tension, but the disadvantage of diminishing LV pressure and stroke volume, compared with loose CMP (8 mm Hg). Moderate CMP (10 mm Hg), however, had the advantage of diminishing LV wall tension without a

decrease in LV pressure and stroke volume.

PMID: 9205171 [PubMed - indexed for MEDLINE]

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File 350:Derwent WPIX 1963-2005/UD,UM &UP=200518
         (c) 2005  Thomson Derwent
File 347:JAPIO Nov 1976-2004/Nov(Updated 050309)
         (c) 2005 JPO & JAPIO
Set     Items   Description
S1      44094   HEART OR PERICARDIUM OR EPICARDIUM OR VENTRICLE
S2      13465   INCISION? ? OR INCISE? ? OR INCISING
S3     941384   CUT OR CUTS OR CUTTING
S4     617094   AROUND
S5    1184084   OVER
S6    1135805   COVER???
S7     336293   SURROUND???
S8      15472   ENCASE? ? OR ENCASING
S9     183679   JACKET? ? OR HARNESS OR HARNESSES OR SOCK? ? OR GIRDLE? ? -
              OR WRAP? OR SPLINT? ? OR CONSTRAINT? ?
S10        68   GIRDLING
S11         0   CARDIAC BINDING
S12    356906   IC=(A61F? OR A61B?)
S13        10   (S4:S8 OR S10 OR BINDING)(1W)S1 AND S2:S3
S14         5   S12 AND S13
S15         5   S13 NOT S14 [not relevant]

14/34/4      (Item 4 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005  Thomson Derwent. All rts. reserv.
012565172     **Image available**
WPI Acc No: 1999-371278/199931
  Annuloplasty ring prothesis for implantation around heart valve
Patent Assignee: ST JUDE MEDICAL INC (SJUD-N)
Inventor: ANDERSON K A; BERGMAN D J; LOCH D A; MELCOCH M G
Number of Countries: 082  Number of Patents: 007
Patent Family:
Patent No      Kind   Date     Applicat No     Kind   Date      Week
WO 9929269      A1  19990617  WO 98US25346     A   19981130  199931  B
AU 9915390      A   19990628  AU 9915390       A   19981130  199946
EP 1037575      A1  20000927  EP 98959631      A   19981130  200048
                              WO 98US25346     A   19981130
US 6174332      B1  20010116  US 97986046      A   19971205  200106
JP 2001525222   W   20011211  WO 98US25346     A   19981130  200204
                              JP 2000523947    A   19981130
EP 1037575      B1  20040901  EP 98959631      A   19981130  200457
                              WO 98US25346     A   19981130
DE 69826028     E   20041007  DE 98626028      A   19981130  200466
                              EP 98959631      A   19981130
                              WO 98US25346     A   19981130
Priority Applications (No Type Date): US 97986046 A 19971205
Patent Details:
Patent No  Kind Lan Pg   Main IPC     Filing Notes
WO 9929269     A1 E  20 A61F-002/24
   Designated States (National): AL AM AT AU AZ BA BB BG BR BY CA CH CN CU
   CZ DE DK EE ES FI GB GD GE GH GM HU ID IL IS JP KE KG KP KR KZ LC LK LR
   LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM
   TR TT UA UG UZ VN YU ZW
   Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR
   IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW
AU 9915390     A         A61F-002/24   Based on patent WO 9929269
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EP 1037575 A1 E A61F-002/24 Based on patent WO 9929269
Designated States (Regional): DE ES FR GB IT
US 6174332 B1 A61F-002/24
JP 2001525222 W 16 A61F-002/24 Based on patent WO 9929269
EP 1037575 B1 E A61F-002/24 Based on patent WO 9929269
Designated States (Regional): DE ES FR GB IT
DE 69826028 E A61F-002/24 Based on patent EP 1037575
Based on patent WO 9929269

Abstract (Basic): WO 9929269 A1

NOVELTY - The annuloplasty ring (10) includes an elongated main body (12) having parial shape extending between two ends. An elongated secondary body (18) also includes two ends which couple to, respectively, the ends (24,20) of the main body. A first **cut** zone couples the first end of the main body to the first end of the secondary body. A second **cut** zone couples the second ends end of the main body to the second end (22) of the secondary body.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is provided for an annuloplasty prosthesis.

USE - To correct defects in a **heart** valve of a **heart**. For providing support to surgically corrected defects in natural valves of a patient's **heart**.

ADVANTAGE - Can be used to repair the tricuspid valve to eliminate any negative effects of placing the suture in or near the AV-node. May be implimented either as a full annular ring or as a partial ring.

DESCRIPTION OF DRAWING(S) - The drawing shows a top plan view of the annuloplasty ring having a portion removed thereby forming a partial annular configuration.

annuloplasty ring (10)
main body (12)
secondary body (18)
ends of the main body (24,20)
second end of the secondary body (22)
pp; 20 DwgNo 2/6

Derwent Class: P32
International Patent Class (Main): A61F-002/24

14/34/5 (Item 5 from file: 350)
DIALOG(R)File 350:Derwent WPIX

011073800 **Image available**
WPI Acc No: 1997-051724/199705
Less incision device for treating cardiac valves i.e. repairing - has annuloplasty device for attaching in heart with holder having elongated handle delivering it through percutaneous penetration in intercostal space and retraction member for retracting tissue
Patent Assignee: **HEART**PORT INC (HEAR-N); DANIEL S C (DANI-I); DONLON B S (DONL-I); GARRISON M E (GARR-I); STEVENS J H (STEV-I)
Inventor: DANIEL S C; DONLON B S; GARRISON M E; STEVENS J H
Number of Countries: 022 Number of Patents: 007
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 9639942	A1	19961219	WO 96US7970	A	19960530	199705	B
AU 9659519	A	19961230	AU 9659519	A	19960530	199716	

EP 836423	A1	19980422	EP 96916756	A	19960530	199820	
			WO 96US7970	A	19960530		
US 5972030	A	19991026	US 9323778	A	19930222	199952	
			US 93163241	A	19931206		
			US 94281962	A	19940728		
			US 95485600	A	19950607		
			US 97949282	A	19971021		
US 6451054	B1	20020917	US 9323778	A	19930222	200264	
			US 93163241	A	19931206		
			US 94281962	A	19940728		
			US 95485600	A	19950607		
			US 97949282	A	19971021		
			US 99426296	A	19991025		
US 20020183839	A1	20021205	US 9323778	A	19930222	200301	
			US 93163241	A	19931206		
			US 94281962	A	19940728		
			US 95485600	A	19950607		
			US 97949282	A	19971021		
			US 99426296	A	19991025		
			US 2002198513	A	20020718		
US 6564805	B2	20030520	US 9323778	A	19930222	200336	
			US 93163241	A	19931206		
			US 94281962	A	19940728		
			US 95485600	A	19950607		
			US 97949282	A	19971021		
			US 99426296	A	19991025		
			US 2002198513	A	20020718		

Priority Applications (No Type Date): US 95485600 A 19950607; US 9323778 A 19930222; US 93163241 A 19931206; US 94281962 A 19940728; US 97949282 A 19971021; US 99426296 A 19991025; US 2002198513 A 20020718
Cited Patents: 1.Jnl.Ref; US 4960424; US 5041130; US 5271385
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 9639942	A1	E	106	A61B-017/00	
Designated States (National): AU CA JP					
Designated States (Regional): AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE					
AU 9659519	A			A61B-017/00	Based on patent WO 9639942
EP 836423	A1	E		A61B-017/00	Based on patent WO 9639942
Designated States (Regional): AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE					
US 5972030	A			A61F-002/24	CIP of application US 9323778
					CIP of application US 93163241
					CIP of application US 94281962
					Cont of application US 95485600
					CIP of patent US 5452733
					CIP of patent US 5571215
US 6451054	B1			A61F-002/24	CIP of application US 9323778
					CIP of application US 93163241
					CIP of application US 94281962
					Cont of application US 95485600
					Cont of application US 97949282
					CIP of patent US 5452733
					CIP of patent US 5571215
					Cont of patent US 5972030

US 20020183839 A1		A61F-002/24	CIP of application US 9323778 CIP of application US 93163241 CIP of application US 94281962 Cont of application US 95485600 Cont of application US 97949282 Div ex application US 99426296 CIP of patent US 5452733 CIP of patent US 5571215 Cont of patent US 5972030 Div ex patent US 6451054
US 6564805	B2	A61B-019/00	CIP of application US 9323778 CIP of application US 93163241 CIP of application US 94281962 Cont of application US 95485600 Cont of application US 97949282 Div ex application US 99426296 CIP of patent US 5452733 CIP of patent US 5571215 Cont of patent US 5972030 Div ex patent US 6451054

Abstract (Basic): WO 9639942 A

The system comprises an annuloplasty device adapted for attachment within the **heart around** the **heart** valve. A device holder releasably holds the annuloplasty device, and an **elongated handle delivers the device holder and annuloplasty device through a percutaneous penetration in the intercostal space.** The handle is attached to the device holder such that the handle, the device holder, and the annuloplasty device together have a profile with a profile height smaller than the intercostal width.

A retraction member retracts tissue in the percutaneous penetration to facilitate positioning the annuloplasty device therethrough while leaving the ribs in the unretracted position. The retraction member comprises a cannula having a distal end positionable in the chest cavity through the intercostal space, a proximal end, and an inner lumen through which the annuloplasty device and device holder may be positioned while attached to the handle.

ADVANTAGE - Allows surgeon to obtain access to valve through intercostal port and **cardiac** penetration, assess nature and extent of valve disease, and then decide whether to repair or replace valve. If disease is such that repair is inappropriate, surgeon may elect to replace valve with any of variety of replacement valves.

Dwg.39/46

Derwent Class: P31; P32
International Patent Class (Main): A61B-017/00 ; A61B-019/00 ; A61F-002/24
International Patent Class (Additional): A61B-017/02

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File 350:Derwent WPIX 1963-2005/UD,UM &UP=200518
         (c) 2005  Thomson Derwent
File 347:JAPIO Nov 1976-2004/Nov(Updated 050309)
         (c) 2005 JPO & JAPIO
Set     Items   Description
S1      59773   CARDIAC OR HEART OR PERICARDI?? OR EPICARDI?? OR VENTRICLE?
              ? OR VENTRICULAR
S2      75306   JACKET? ? OR HARNESS OR HARNESSES OR SHAPE()CHANGE()DEVICE? ?
S3      51511   SOCK? ? OR GIRDLE? ? OR WRAP? ? OR SPLINT? ?
S4      13465   INCISION? ? OR INCISE? ? OR INCISING
S5     941384   CUT OR CUTS OR CUTTING
S6       1720   MINIMALLY()INVASIVE OR MINIMAL()ACCESS OR THORACOSCOPIC
S7      29031   SURGERY OR SURGERIES
S8    2077575   OPERATION? ?
S9     209978   PROCEDURE? ?
S10    234125   TECHNIQUE? ?
S11   4467492   METHOD? ?
S12         5   MINIMAL()SURGICAL()PROCEDURE? ?
S13    356906   IC=(A61F? OR A61B?)
S14       188   S1 (S)S2:S3
S15        12   S14 AND S4:S5
S16         7   S14 AND (S6 OR S12)
S17        53   S14(S)S7:S11
S18        17   S15 OR S16
S19        14   S18 AND S13
S20         3   S18 NOT S19 [not relevant]
S21        41   S17 NOT S18
S22        29   S21 AND S13
S23        12   S21 NOT S22
S24      8140   CONSTRAINT
S25        12   S1()S24
S26         0   S4:S5 AND S25
S27        26   S1(S)S24
S28        19   S27 NOT (S19 OR S20 OR S22 OR S23)
S29         3   S28 AND (S4 OR S5 OR S6 OR S12)

19/26,TI/4     (Item 4 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005  Thomson Derwent. All rts. reserv.
015214470
WPI Acc No: 2003-275007/200327
  Cardio-thoracic compression harness for use by post-trauma patient who
  underwent open heart surgery or thoracic surgery, has fastener located
  at the side of harness to avoid contact with incision area of user

19/26,TI/10     (Item 10 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005  Thomson Derwent. All rts. reserv.
013751013
WPI Acc No: 2001-235242/200124
  Resorbable and remodelable implant material for performing duraplasty,
  comprises sterile, non-crosslinked, decellullarized and purified
  mammalian tissue with a major percent of available amine group alkylated

19/26,TI/14     (Item 14 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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(c) 2005 Thomson Derwent. All rts. reserv.
010329487
WPI Acc No: 1995-231330/199530
Stentless prosthetic **heart** valve - made from autologous **pericardium** tissue, shaped and joined to form inner valve cusps

22/26,TI/8 (Item 8 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.
015030472
WPI Acc No: 2003-090989/200308
Alignment device for aligning positions on a **heart**, has handle assembly provided with first and second handle portions which are releasably connected to permit movement independent of one another

22/26,TI/17 (Item 17 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.
013627725
WPI Acc No: 2001-111933/200112
Device for treating **cardiac** diseases like congestive **heart** disease, comprises indicator on flexible **jacket** which restrains position of **heart** and prevents enlargement of **heart** beyond adjusted volume during diastole

22/26,TI/24 (Item 24 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.
011064878
WPI Acc No: 1997-042803/199704
Cardiac cooling **jacket** used to reduced metabolism of **heart** during open **heart** **surgery** - has impervious material thin sheet to which is bonded second sheet to form serpentine passages, and insulating closure tab with insulating sheet

22/26,TI/25 (Item 25 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.
010296879
WPI Acc No: 1995-198139/199526
Stent for single **procedure** skeletal muscle **ventricles** (SMV) - **wrapping** muscle round biodegradable stent and locating in intra-thoracic site before connecting to bifurcated graft.

22/26,TI/28 (Item 28 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.
004345378
WPI Acc No: 1985-172256/198529
Cable **harness** with support for ECG application - minimises movement in **heart** region whilst detecting R-spikes to trigger X-ray exposures at particular time

23/26,TI/6 (Item 6 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.
013998093

WPI Acc No: 2001-482308/200152
Cardiac lead assembly for implanting **cardiac** stimulator within **heart**, comprises **cardiac** lead, tubular introducer and specific lubricant to lubricate sliding movement of **cardiac** lead through tubular introducer

19/7,K/2 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX

015737615 **Image available**
WPI Acc No: 2003-799816/200375
Cardiac restraint apparatus has **jacket** with rim, cylindrical sheath, knot pusher, strand, and guide tube(s)
Patent Assignee: ORIGIN MEDSYSTEMS INC (ORIG-N)
Inventor: CHIN A K
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 6569082	B1	20030527	US 99148130	P	19990810	200375	B
			US 99150737	P	19990825		
			US 2000635345	A	20000809		
			US 2000738608	A	20001214		
			US 2001779715	A	20010208		

Priority Applications (No Type Date): US 2001779715 A 20010208; US 99148130 P 19990810; US 99150737 P 19990825; US 2000635345 A 20000809; US 2000738608 A 20001214
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6569082	B1		24	A61F-002/00	Provisional application US 99148130
					Provisional application US 99150737
					CIP of application US 2000635345
					Cont of application US 2000738608

Abstract (Basic): US 6569082 B1
NOVELTY - A **cardiac** restraint apparatus has a **jacket** having a rim that defines an opening for receiving a **heart** ; a cylindrical sheath enclosing the **jacket** ; a knot pusher with a hollow elongated body; a strand extending around the rim and being tied into a slip knot with end portion(s) of the strand; and guide tube(s) attached to the **jacket** to facilitate placement of the **jacket** around the **heart** .
DETAILED DESCRIPTION - A **cardiac** restraint apparatus comprises a **jacket** (130) having a rim (140) that defines an opening (150) for receiving a **heart** ; a generally cylindrical sheath enclosing the **jacket** folded in compact state within the sheath for expansion to non-compact state outside the sheath; a knot pusher (120) having a hollow elongated body; a strand extending around the rim of the **jacket** and being tied into a slipknot (670) with end portion(s) (165) of the strand (160) extending through the knot pusher with a distal end movable into engagement with the slipknot to facilitate reduction of the opening defined by the rim in response to pulling on the end portion of the strand away from the **heart** , and to pushing the distal end of the knot pusher into engagement with the slipknot; and guide tube(s) attached to the **jacket** to facilitate placement of the **jacket** around the **heart** . The sheath includes perforations to facilitate tearing the sheath for release of the **jacket** from the compact state and for removal of the torn sheath from the apparatus.

An INDEPENDENT CLAIM is also included for a **method** of partially enclosing the **heart** of a patient with the **cardiac** restraint apparatus, comprising making a **surgical incision** in the patient to provide an entry point for an endoscopic cannula; inserting into the **surgical incision** the endoscopic cannula having lumen(s); advancing the endoscopic cannular to a **pericardium** under endoscopic visualization; introducing a **cutting** tool through the lumen of the cannula toward the **pericardium** ; forming an opening with the **cutting** tool in the **pericardium** to admit the **cardiac** restraint apparatus; advancing the **cardiac** restraint apparatus through the lumen of the cannula into engagement with the **heart** ; advancing a tacking instrument through the lumen of the cannula to tack the rim of the **jacket** to a posterior **pericardium** ; and manipulating the guide tube to position the **jacket** over the anterior aspect of the **heart** to partially enclose the **heart** in the **jacket** .

USE - For **cardiac** restraint.

ADVANTAGE - The inventive apparatus can be more easily introduced via a **minimally invasive** approach. It **accesses** the **heart** within the **pericardium** and restrains the **heart** by partially enclosing the **heart** with the inventive apparatus.

DESCRIPTION OF DRAWING(S) - The figure is a partial cross sectional view of the **operation** of a knot pusher in reducing the diameter of an opening of a **cardiac** restraint apparatus.

Knot pusher (120)
Jacket (130)
Rim (140)
Opening (150)
Strand (160)
End portion (165)
Slipknot (670)
pp; 24 DwgNo 2/10

Derwent Class: A96; B07; P32
International Patent Class (Main): A61F-002/00
International Patent Class (Additional): A61F-013/00

19/7,K/3 (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.
015417064 **Image available**
WPI Acc No: 2003-479204/200345
Implanting system for **cardiac** **wrap** , includes loop members being operatively connected to an implantable **wrap** to provide tactile control of **wrap** placement during implantation
Patent Assignee: ABIOMED INC (ABIO-N)
Inventor: BUCK R L; MILBOCKER M T
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 6572534	B1	20030603	US 2000661624	A	20000914	200345	B

Priority Applications (No Type Date): US 2000661624 A 20000914
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6572534	B1		24	A61F-002/02	

Abstract (Basic): US 6572534 B1
NOVELTY - Loop members (122) removably engage a clinician's hand

until a predetermined disengagement time, the members being operatively connected to an implantable **wrap** (100) to provide tactile control of **wrap** placement during implantation.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(a) a **method** in implanting a **cardiac** **wrap** ;

(b) an apparatus for treating the **heart**; and

(c) a **cardiac** **wrap**

USE - For implanting a **wrap** on a patient's **heart** or other organs.

ADVANTAGE - Allows easier manipulation onto, and fixation of **wrap** to the affected region of a patient's **heart** . Enables formation of smaller **incision** between the patient's ribs.

DESCRIPTION OF DRAWING(S) - The figure shows the perspective view of the **wrap** applied to a **heart** **ventricle** .

Implantable **wrap** (100)

Loop members (122)

pp; 24 DwgNo 2/17

Derwent Class: P32

International Patent Class (Main): A61F-002/02

19/7,K/5 (Item 5 from file: 350)

DIALOG(R)File 350:Derwent WPIX

014685732 **Image available**

WPI Acc No: 2002-506436/200254

Cardiac reinforcement device for treating cardiomyopathy, comprises **jacket** of biomedical material for constraining **cardiac** expansion without assisting systolic relaxation, and **cardiac** performance evaluating marker

Patent Assignee: ACORN CARDIOVASCULAR INC (ACOR-N)

Inventor: ALFERNESS C A

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 6375608	B1	20020423	US 96720556	A	19961002	200254	B
			US 97935723	A	19970923		
			US 2000483466	A	20000114		
			US 2000696651	A	20001025		

Priority Applications (No Type Date): US 96720556 A 19961002; US 97935723 A 19970923; US 2000483466 A 20000114; US 2000696651 A 20001025

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6375608	B1		11	A61B-019/00	Cont of application US 96720556
					Cont of application US 97935723
					Cont of application US 2000483466
					Cont of patent US 5702343
					Cont of patent US 6077218
					Cont of patent US 6165122

Abstract (Basic): US 6375608 B1

NOVELTY - The passive **cardiac** reinforcement device (43) comprises a **jacket** (40) constructed from a biomedical material, and a marker for evaluating **cardiac** performance. The **jacket** , having an apical end (50) and a base end (42), surrounds an external surface of the **heart** (41) and constrains **cardiac** expansion during diastole beyond a

predetermined limit without assisting **cardiac** contraction during systole.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for monitoring **cardiac** performance of the **heart** by using the passive **cardiac** reinforcement device.

USE - For passive **cardiac** wall reinforcement, and for constraining outward expansion of **heart** wall of a patient's **heart** during diastole. The device is used for the treatment of **cardiac** disease such as **heart** failure or cardiomyopathy which results in atrial or **ventricular** dilation and reduces diastolic volume of the **heart**.

ADVANTAGE - The device provides reinforcement of the **cardiac** wall during diastolic chamber filling, to prevent or reduce **cardiac** dilation in patients. The device reduces and prevents **cardiac** dilation and thereby reduces the problems associated with dilation. The **cardiac** reinforcement **jacket** can be applied to the **epicardial** surface via a **minimally invasive procedure** such as thorascopy. A securing arrangement secures the **jacket** to the **epicardial** surface of the **heart** . The **cardiac** reinforcement **jacket** also includes mechanism for selectively adjusting the predetermined size of the **jacket** around the **epicardial** surface of the **heart** . The adjustment mechanism includes a slot (45) have opposing lateral edges (46,47) which when pulled together decrease the volumetric size of the **jacket** . Inflation of an inflatable member provides reduction in the volumetric size of the **jacket** . The biomedical material is inflexible, but flexible to move with the expansion and contraction of the **heart** without impairing systolic function. The constraint of **cardiac** expansion by the device provides reduced **cardiac** dilation which thereby reduces problems associated with **cardiac** dilation such as arrhythmias and valvular leakage.

DESCRIPTION OF DRAWING(S) - The figure shows a perspective view of the **cardiac** reinforcement **jacket** in place around the **heart** .

Jacket (40)
Heart (41)
Base of the **jacket** (42)
Cardiac reinforcement device (43)
Slot (45)
Opposing lateral edges (46,47)
Apical end of the **jacket** (50)
pp; 11 DwgNo 5/8

Derwent Class: A96; P31
International Patent Class (Main): A61B-019/00

19/7,K/7 (Item 7 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.
014367582 **Image available**
WPI Acc No: 2002-188284/200224
Device for treating congestive **heart** disease, comprises flexible material made **jacket** adjustable on **heart** to snugly conform to external geometry of **heart** to constrain circumferential enlargement of **heart**
Patent Assignee: ACORN CARDIOVASCULAR INC (ACOR-N)
Inventor: ALFERNESS C A; COX J E; GIRARD M J; PALME D F; ROHRBAUGH D G; SHAPLAND J E
Number of Countries: 097 Number of Patents: 008

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200195830	A2	20011220	WO 2001US17958	A	20010604	200224 B
AU 200175176	A	20011224	AU 200175176	A	20010604	200227
US 6482146	B1	20021119	US 2000593251	A	20000613	200280
EP 1289445	A2	20030312	EP 2001941856	A	20010604	200320
			WO 2001US17958	A	20010604	
US 20030045776	A1	20030306	US 2000593251	A	20000613	200320
			US 2002279176	A	20021023	
US 6682476	B2	20040127	US 2000593251	A	20000613	200408
			US 2002279176	A	20021023	
JP 2004503292	W	20040205	WO 2001US17958	A	20010604	200412
			JP 2002510015	A	20010604	
US 20040102679	A1	20040527	US 2000593251	A	20000613	200435
			US 2002279176	A	20021023	
			US 2003716020	A	20031117	

Priority Applications (No Type Date): US 2000593251 A 20000613; US 2002279176 A 20021023; US 2003716020 A 20031117

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200195830	A2	E	55	A61F-002/00	
Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW				
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW					
AU 200175176	A				Based on patent WO 200195830
US 6482146	B1			A61F-002/00	
EP 1289445	A2	E		A61F-002/00	Based on patent WO 200195830
Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR					
US 20030045776	A1			A61F-002/00	Cont of application US 2000593251
					Cont of patent US 6482146
US 6682476	B2			A61F-002/00	Cont of application US 2000593251
					Cont of patent US 6482146
JP 2004503292	W		86	A61M-001/10	Based on patent WO 200195830
US 20040102679	A1			A61F-002/00	Cont of application US 2000593251
					Cont of application US 2002279176
					Cont of patent US 6482146
					Cont of patent US 6682476

Abstract (Basic): WO 200195830 A2

NOVELTY - The device comprises a **jacket** (10) of flexible material. The **jacket** is adjustable on a **heart** (H) to snugly conform to an external geometry of the **heart** and assume a maximum adjusted volume for the **jacket** to constrain circumferential expansion of the **heart** beyond the maximum adjusted volume during diastole and permit substantially unimpeded contraction of the **heart** during systole.

DETAILED DESCRIPTION - The device comprises a **jacket** (10) of flexible material. The **jacket** is adjustable on a **heart** (H) to snugly conform to an external geometry of the **heart** and assume a maximum adjusted volume for the **jacket** to constrain circumferential expansion of the **heart** beyond the maximum adjusted volume during diastole and permit substantially unimpeded contraction of the **heart** during systole.

The **heart** has longitudinal axis, and upper and lower portions

divided by an A-V groove (AVG). The **heart** includes a valvular annulus (VA) adjacent to A-V groove and **ventricular** lower extremities adjacent to apex (A). Multi-axial expansion of the flexible material of the **jacket** is less than 30% when the material is exposed to a load up to 5 pounds per inch (9 N/cm). The **jacket** is dimensioned for insertion of the apex of the **heart** into the **jacket** volume through an open upper end (12) and for the **jacket** to be slipped over the **heart** . The **jacket** is further dimensioned to have a longitudinal dimension between the upper and lower ends (12,14) sufficient to constrain the lower portion with the **jacket** constraining the valvular annulus. The **jacket** is adapted to be secured to the **heart** with the **jacket** having portions disposed on opposite sides of the **heart** between the valvular annulus and the **ventricular** lower extremities. The **jacket** is closed or opened at the lower end.

USE - For treating congestive **heart** disease such as cardiomyopathy, valvular dysfunctions and related **cardiac** complications.

ADVANTAGE - The **jacket** is adjustable on the **heart** to snug fit encompassing the external volume of the **heart** during diastole such that the **jacket** constraints enlargement of the **heart** during diastole without significantly assisting contraction during systole. The A-V groove and major vessels act as natural stops for placement of the **jacket** (10) while assuring coverage of the valvular annulus. Using such features of natural stops is particularly beneficial in **minimally invasive surgeries** where a surgeon's vision may be obscured or limited. The **jacket** produces **heart** size at the time of placement in addition to preventing further enlargement. As the **jacket** is made up of biologically compatible flexible material the material does not adversely affect the surrounding tissue by eliciting excessive or injurious rejection responses, inflammation, infarction, necrosis, etc. The **jacket** provides reduced expansion of the **heart** wall during diastole by applying constraining surfaces at least at diametrically opposing aspects of the **heart** . The **jacket** exerts no or only a slight pressure on the **heart** at the end systole. The knit material is flexible to permit unrestricted movement of the **heart** (other than the desired constraint on circumferential expansion). The material is open defining a plurality of interstitial spaces for fluid permeability as well as minimizing the amount of surface area of direct contact between the **heart** and the material of the **jacket** (thereby minimizing areas of irritation or abrasion) to minimize fibrosis and scar tissue. The device is inexpensive and almost risk free for treating **cardiac** disease. The disease reduces the rate of the enlargement of the **heart** as well as **cardiac** valve regurgitation.

DESCRIPTION OF DRAWING(S) - The figure shows a side elevational view of a diseased **heart** in diastole with the device in place.

Jacket (10)
Upper and lower ends (12,14)
Apex (A)
Heart (H)
Valvular annulus (VA)
A-V groove (AVG)
pp; 55 DwgNo 3A/22

Derwent Class: A96; B07; D22; P31; P32; P34
International Patent Class (Main): A61F-002/00 ; A61M-001/10
International Patent Class (Additional): A61B-017/00 ; A61F-002/24 ; A61F-011/00

19/7,K/8 (Item 8 from file: 350)
DIALOG(R)File 350:Derwent WPIX

014350793 **Image available**
WPI Acc No: 2002-171496/200222
Device for treating **cardiac** disease, comprises **jacket** of flexible material having internal volume adapted to secure to **heart** to snugly conform to external geometry of **heart** , and therapeutic agent delivery source
Patent Assignee: ACORN CARDIOVASCULAR INC (ACOR-N)
Inventor: PALME D F; ROHRBAUGH D G; SHAPLAND J E; WALSH R G
Number of Countries: 096 Number of Patents: 004
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200195832	A2	20011220	WO 2001US17960	A	20010604	200222	B
AU 200175178	A	20011224	AU 200175178	A	20010604	200227	
EP 1289447	A2	20030312	EP 2001941858	A	20010604	200320	
			WO 2001US17960	A	20010604		
JP 2004503294	W	20040205	WO 2001US17960	A	20010604	200412	
			JP 2002510017	A	20010604		

Priority Applications (No Type Date): US 2000591754 A 20000612
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200195832	A2	E	55	A61F-002/00	
Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW				
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW					
AU 200175178	A			A61F-002/00	Based on patent WO 200195832
EP 1289447	A2	E		A61F-002/00	Based on patent WO 200195832
Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR					
JP 2004503294	W		89	A61M-037/00	Based on patent WO 200195832

Abstract (Basic): WO 200195832 A2

NOVELTY - A device for treating **cardiac** disease of a **heart** (H), comprises a **jacket** (10) of flexible material defining a volume between an upper end (12) and a lower end (14), and a delivery source for delivering therapeutic agent(s) to the **heart** surface. The **jacket** is adapted to be secured to the **heart** and adjusted on the **heart** to snugly conform to an external geometry of the **heart** .

DETAILED DESCRIPTION - A device for treating **cardiac** disease of a **heart** (H), comprises a **jacket** (10) of flexible material defining a volume between an upper end (12) and a lower end (14), and a delivery source for delivering therapeutic agent(s) to the **heart** surface. The **jacket** is adapted to be secured to the **heart** and adjusted on the **heart** to snugly conform to an external geometry of the **heart** . The **heart** has an upper portion and a lower portion divided by an auriculo-**ventricular** (A-V) groove. The **jacket** is defined with a maximum adjusted space to constrain circumferential expansion of the **heart** beyond a maximum adjusted volume during diastole and permit substantially unimpeded contraction of the **heart** during systole.

INDEPENDENT CLAIMS are also included for the following:

(a) **Method** for treating **cardiac** disease of a **heart** having an upper

portion and a lower portion divided by A-V groove comprising **surgically accessing** the **heart**; and

(b) **Method** for providing controlled and sustained administration of therapeutic agent(s) effective in treating **cardiac** disease.

USE - The device is used in the treatment of **cardiac** disease e.g. cardiomyopathy, valvular insufficiency, arrhythmia, initial stages of congestive **heart** failure, such a myocardial infarction, later stages of congestive **heart** failures, such as chronic dilated cardiomyopathy, and related **cardiac** complications, for patients facing **cardiac** enlargement due to viral infection, for treating valvular disorders, and for use in treating tissues surrounding **heart** or other tissues of body.

ADVANTAGE - The device provides sustained, controlled release of lower amounts of therapeutic agent(s) with potentially higher localized concentrations, while in intimate, long-term and non-shifting contact with the **heart** . The application of the therapeutic agent can be localized so that the therapeutic agent is only delivered to selected target areas of the **heart** , target areas surrounding the **heart** , and tissues of the body. Adverse systemic effects of therapeutic agents, are efficiently avoided. The **jacket** can be adjusted to any suitable size and **shape**for application to the **heart** , at any time of the application. The **jacket** is secured to the **heart** using a suitable bioadhesive which does not interfere with the penetration of the therapeutic agents and does not cause any undesired adverse effects, such as irritation, inflammation, and infection, of tissues of the **heart** . The **jacket** efficiently constrains enlargement of the **heart** beyond the maximum adjusted volume while preventing restricted contraction of the **heart** during systole. The flexible material of the **jacket** allows unrestricted filling of the **heart** during diastole. The flexible material minimizes the amount of surface area in direct contact between the **heart** and the **jacket** material. The area of irritation, abrasion, fibrosis and scar tissue, are minimized. Surgeons can efficiently remove parts of the **jacket** lined or coated/attached with non-adherent material, if coronary artery bypass **surgery** is necessary in a patient who received the device. The **jacket** is inexpensive, easy to place and secure and is amendable to use in **minimally invasive procedures**. The **jacket** prevents over stressing or stretching of **ventricle** at the end of diastole. Cellular material having various clinical applications, is introduced to the **heart** to repair, replace or enhance the biological function of damaged cells in order to strengthen a weakened **heart** . The device is not loosened by natural movement of the **heart** , and hence therapeutic agents are delivered for prolonged period. The degradable materials and non-degradable materials such as polymeric matrix material of the **jacket** coating material, remain in the body for prolonged period, and these materials do not contain any leachable components that may be toxic to tissues. The natural movement of the **heart** is used as an energy source for therapeutic agent delivery, by the device, without damaging the tissues.

DESCRIPTION OF DRAWING(S) - The figure shows a side elevation view of a diseased **heart** in diastole with the **cardiac** constraint device.

Jacket (10)
Upper end (12)
Lower end (14)
Heart (H)
pp; 55 DwgNo 3A/9

Derwent Class: A96; B07; D22; P32; P34

International Patent Class (Main): A61F-002/00 ; A61M-037/00
Technology Focus:
... Preferred Device: The delivery source comprises a coating on the **jacket** . The coating comprises a biodegradable matrix material and therapeutic agent. The delivery source comprises a separable element from the **jacket** , which is a bladder, patch or bioadhesive. The **jacket** actively assists the delivery of the therapeutic agent to the **heart** .

19/7,K/9 (Item 9 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.
014262170 **Image available**
WPI Acc No: 2002-082868/200211
Cardiac constraint device for treating congestive **heart** disease, comprises **jacket** made of flexible material secured to **heart** to conform external geometry of **heart** to constrain and adjustment mechanism fixed to **jacket**
Patent Assignee: ACORN CARDIOVASCULAR INC (ACOR-N)
Inventor: DOCKTER J D; SHAPLAND J E; WALSH R G; VANDEN HOEK J C
Number of Countries: 096 Number of Patents: 007
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200185061	A2	20011115	WO 2001US12411	A	20010417	200211 B
AU 200153565	A	20011120	AU 200153565	A	20010417	200219
US 6425856	B1	20020730	US 2000567726	A	20000510	200254
US 20020151766	A1	20021017	US 2000567726	A	20000510	200270
			US 2002172523	A	20020613	
EP 1284679	A2	20030226	EP 2001927083	A	20010417	200319
			WO 2001US12411	A	20010417	
JP 2003532489	W	20031105	JP 2001581719	A	20010417	200377
			WO 2001US12411	A	20010417	
US 20040133069	A1	20040708	US 2000567726	A	20000510	200445
			US 2002172523	A	20020613	
			US 2003639875	A	20030812	

Priority Applications (No Type Date): US 2000567726 A 20000510; US 2002172523 A 20020613; US 2003639875 A 20030812
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200185061	A2	E	44	A61F-002/00	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW

AU 200153565	A			Based on patent WO 200185061
US 6425856	B1		A61F-013/00	
US 20020151766	A1		A61F-002/00	Div ex application US 2000567726 Div ex patent US 6425856
EP 1284679	A2	E	A61F-002/00	Based on patent WO 200185061

Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR

JP 2003532489	W	55	A61B-017/00	Based on patent WO 200185061
US 20040133069	A1		A61F-002/00	Div ex application US 2000567726

Cont of application US 2002172523
Div ex patent US 6425856

Abstract (Basic): WO 200185061 A2

NOVELTY - A **cardiac** constraint device comprises a **jacket** (10) made of flexible material and an adjustment mechanism (AM) fixed to **jacket** . The **jacket** is secured to **heart** to snugly conform external geometry of **heart** to constrain circumferential expansion of the **heart** beyond a maximum adjusted volume, during diastole and systole. AM is capable of altering internal volume (16) of the **jacket** after secured to **heart** .

DETAILED DESCRIPTION - A **cardiac** constraint device comprises a **jacket** made of flexible material volume and an adjustment mechanism (AM) fixed to **jacket** . The **jacket** is secured to **heart** to snugly conform to the external geometry of **heart** to constrain circumferential expansion of the **heart** beyond a maximum adjusted volume, during diastole and permit substantially unimpeded contraction of the **heart** during systole. AM is capable of altering the internal volume defined by the **jacket** after secured to the **heart** .

An INDEPENDENT CLAIM is also included for treatment of **cardiac** disease of a patient's **heart** . The patient's **heart** is **surgically accessed** and a **cardiac** restraining device comprising a **jacket** and an AM, is placed around the **heart** . The **access** to the **heart** is **surgically** closed, while leaving the **jacket** in place on the **heart** . The internal volume of the **jacket** is adjusted after fixing, by using AM.

USE - For treating congestive **heart** disease (claimed) and related valvular dysfunction.

ADVANTAGE - The material of device is flexible to permit unrestricted movement of the **heart** . The material is open with several interstitial spaces for fluid permeability as well as minimizing the amount of surface area of direct contact between the **heart** and the material of the **jacket** to minimize fibrosis and scar tissue. The **jacket** is low cost, easy to place and secure and is susceptible to use in **minimally invasive procedures**. The fabric is tear and run resistance. The **jacket** need not be directly applied to the **epicardium** but can be placed over the parietal **pericardium** . The thin and flexible fabric permits the **jacket** to be collapsed and passed through the small diameter. The **jacket** freely permits longitudinal and circumferential contraction of the **heart** and does not impede **cardiac** contraction. The **jacket** is in-elastic to prevent further **heart** enlargement, while permitting unrestricted inward movement of **ventricular** walls. The **jacket** does not assist the **heart** during systolic contraction. The open cell structure of AM permits **access** to coronary vessels for bypass **procedures**. The material of **jacket** is uniformly thin, less susceptible to fibrosis and minimizes interference with **cardiac** contractile function. The **jackets** prevents **cardiac** dilation and reverse **cardiac** dilation, providing beneficial reverse re-modeling of **heart** which reduces maximum **cardiac** wall of a disease **heart** . The **jacket** can be adjusted to respond to the change in **cardiac** size. A positive **cardiac** response is slightly to be favorable in response to slow, gradual tensioning compared to rapid decrease in size of **heart** .

DESCRIPTION OF DRAWING(S) - The figure shows perspective view of **cardiac** constraint device.

Jacket (10)

Internal volume (16)

Stay elements (51)
pp; 44 DwgNo 8/12
Derwent Class: A96; B04; D22; P31; P32; P34
International Patent Class (Main): A61B-017/00 ; A61F-002/00 ; A61F-013/00
International Patent Class (Additional): A61L-015/18; A61L-015/28; A61L-027/00; A61L-029/00
Technology Focus:
... Preferred Arrangement: AM is configured to reduce or alter the internal volume of **jacket** , after secured to **heart** , by varying the thickness of internal volume material. The AM is configured to cinch the **jacket** material to effectively decrease the internal volume of **jacket** . The AM comprises stay element(s) (51). The stay element is placed on receptacle positions on the external surface of **jacket** or positioned circumferentially around the **jacket** . The AM further comprises a spring tensioning device equipped with a spring, a tension-lock...
...radially positioned spaced ribs, having an end to lie proximate to the lower end of **jacket** and another end to the upper end of **jacket** . The ribs are adopted to exert an axially directed radial force on the external geometry of the **heart** . The ribs are made of material such as metal, metal alloy and/or polymer. Some...

19/7,K/11 (Item 11 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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013652351 **Image available**
WPI Acc No: 2001-136563/200114
Cardiac reinforcement device for treating cardiomyopathy, resulting from atrial or **ventricular** dilation, comprises placement tool attached to open end of **jacket** to maintain **shape**of **jacket** during implantation
Patent Assignee: ACORN CARDIOVASCULAR INC (ACOR-N)
Inventor: ALFERNESS C A
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 6165121	A	20001226	US 96720556	A	19961002	200114	B
			US 97935440	A	19970923		
			US 99376812	A	19990818		

Priority Applications (No Type Date): US 96720556 A 19961002; US 97935440 A 19970923; US 99376812 A 19990818
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6165121	A		11	A61B-019/00	Cont of application US 96720556
					Cont of application US 97935440
					Cont of patent US 5702343

Abstract (Basic): US 6165121 A
NOVELTY - A **cardiac** reinforcement device comprises a **jacket** (71) with an open base end (76) and an apex end, for covering the **heart** (72). The **jacket** made of a biomedical material having predetermined size is devised to constrain **cardiac** expansion beyond a predetermined limit. A placement tool (70) attached to the open end of the **jacket** maintains the **shape**of the **jacket** during implantation.
DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a **method** which reduces the diastolic volume of a patient's **heart**.

USE - For treating **cardiac** disease such as **heart** attack, post myocardial infarction, and cardiomyopathy such as hypertropic cardiomyopathy and dilated cardiomyopathy. Thereby reduce the diastolic volume of **heart**.

ADVANTAGE - The device effectively reduces or prevents **cardiac** dilation and reduces problems associated with dilation. The reinforcement **jacket** may be implanted by thorascopy. The size of the **jacket** can be easily adjusted depending upon the **cardiac** size of the patient. The device can be implanted easily by thorascopic **incision** .

DESCRIPTION OF DRAWING(S) - The figure shows a perspective view of a placement tool employed with a **cardiac** reinforcement **jacket** over the **heart** .

Placement tool (70)
Jacket (71)
Heart (72)
Open base end (76)
pp; 11 DwgNo 8/8

Derwent Class: A96; P31
International Patent Class (Main): A61B-019/00

19/7,K/13 (Item 13 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.
011659337 **Image available**
WPI Acc No: 1998-076245/199807
Cardiac reinforcement device - comprises **jacket** of biomedical material which can be applied to **epicardium** of **heart** to locally or circumferentially constrain diastolic expansion of **cardiac** wall
Patent Assignee: ACORN CARDIOVASCULAR INC (ACOR-N); ACORN MEDICAL INC (ACOR-N)
Inventor: ALFERNESS C A
Number of Countries: 080 Number of Patents: 013
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 5702343	A	19971230	US 96720556	A	19961002	199807	B
WO 9814136	A1	19980409	WO 97US17898	A	19971001	199821	
AU 9747450	A	19980424	AU 9747450	A	19971001	199835	
EP 930856	A1	19990728	EP 97909962	A	19971001	199934	
			WO 97US17898	A	19971001		
AU 723460	B	20000824	AU 9747450	A	19971001	200045	
DE 29724206	U1	20000810	DE 297024206	U	19971001	200045	
			WO 97US17898	A	19971001		
NZ 335051	A	20001027	NZ 335051	A	19971001	200062	
			WO 97US17898	A	19971001		
NZ 506663	A	20020726	NZ 506663	A	19971001	200262	
NZ 515821	A	20030926	NZ 506663	A	19971001	200366	
			NZ 515821	A	19971001		
CA 2451964	A1	19980409	CA 2267104	A	19971001	200417	
			CA 2451964	A	19971001		
CA 2267104	C	20040713	CA 2267104	A	19971001	200447	
			WO 97US17898	A	19971001		
EP 930856	B1	20041208	EP 97909962	A	19971001	200480	
			WO 97US17898	A	19971001		
			EP 20047517	A	19971001		
DE 69731890	E	20050113	DE 97631890	A	19971001	200506	

EP 97909962 A 19971001
WO 97US17898 A 19971001
Priority Applications (No Type Date): US 96720556 A 19961002
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 5702343	A		9	A61F-013/00	
WO 9814136	A1	E	27	A61F-002/02	

Designated States (National): AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZW
Designated States (Regional): AT BE CH DE DK EA ES FI FR GB GH GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW

AU 9747450	A		A61F-002/02	Based on patent WO 9814136
EP 930856	A1	E	A61F-002/02	Based on patent WO 9814136

Designated States (Regional): AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

AU 723460	B	A61F-002/02	Previous Publ. patent AU 9747450 Based on patent WO 9814136
DE 29724206	U1	A61F-002/02	Application no. WO 97US17898
NZ 335051	A	A61F-002/02	Div in patent NZ 506663 Based on patent WO 9814136
NZ 506663	A	A61F-002/02	Div in patent NZ 515821
NZ 515821	A	A61F-002/02	Div ex application NZ 506663 Div ex patent NZ 506663
CA 2451964	A1	E	A61F-002/02	Div ex application CA 2267104
CA 2267104	C	E	A61F-002/02	Based on patent WO 9814136
EP 930856	B1	E	A61F-002/02	Related to application EP 20047517 Based on patent WO 9814136

Designated States (Regional): AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

DE 69731890	E	A61F-002/02	Based on patent EP 930856 Based on patent WO 9814136

Abstract (Basic): US 5702343 A

A **cardiac** reinforcement device (CRD) comprises a **jacket** (40) of biomedical material having a circumferential attachment device (43) located at its base (42) for securing the CRD **jacket** (40) near the base of the **heart** (44), the attachment device (43) being made of an elastic material such as silicone rubber. A slot (45) with opposing edges (46,47) fastened together by an attachment device (48) can be used in conjunction with the elastic attachment device (43) to apply a graded restraint around the outside of the **heart** (41). The apex (51) of the **heart** protrudes through an opening (49) at the apical end (50) of the CRD **jacket** (40).

Also claimed is a **cardiac** reinforcement device including an inflatable member inserted between the **jacket** and the **epicardial** surface of the **heart** , by means of which the predetermined size of the **jacket** may be selectively adjusted.

Preferably the biomedical material is silicone rubber or polyester mesh and includes a platinum wire radiopaque marker.

USE - For use in cardiomyopathies to reduce or prevent abnormal dilation of one or more chambers of the **heart**.

ADVANTAGE - Can be applied to the **epicardial** surface of the **heart** via a **minimally invasive procedure** such as thorascopy.

Dwg.5/8

Derwent Class: A96; D22; P32; P34

International Patent Class (Main): A61F-002/02 ; A61F-013/00
International Patent Class (Additional): A61L-027/18

22/7,K/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

016750755 **Image available**
WPI Acc No: 2005-075033/200508
Girdle for surrounding several chordae tendinae for treating **heart** valve, comprises filamentous unit comprising **shape**memory material to allow transition between linear delivery configuration and annular treatment configuration
Patent Assignee: MEDTRONIC VASCULAR INC (MEDT)
Inventor: CANGIALOSI V J; DOUK N; RAFIEE N
Number of Countries: 108 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 2004112651	A2	20041229	WO 2004US19717	A	20040618	200508	B

Priority Applications (No Type Date): US 2003480364 P 20030620
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 2004112651	A2	E	30	A61F-000/00	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
Designated States (Regional): AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NA NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

Abstract (Basic): WO 2004112651 A2
NOVELTY - A chordae tendinae supporting **girdle** (120) comprises a filamentous unit comprising a **shape**memory material to allow a transition between a linear delivery configuration and annular treatment configuration.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:
(1) system for treating **heart** valve comprising an elongate delivery catheter having lumen and **girdle** having an annular treatment configuration sized and shaped to surround several chordae tendinae of the **heart** valve. The **girdle** has a linear delivery configuration sized and shaped to be releasably disposed within lumen of the delivery catheter; and
(2) treating **heart** valve, which involves delivering the **girdle** in lumen of catheter adjacent to the **heart** valve, releasing the **girdle** and encircling several chordae tendinae of the **heart** valve with the **girdle**.
USE - In system for treating **heart** valves.
ADVANTAGE - The **girdle** gathers the chordae tendinae into a bundle and effectively shortens them to resolve or reduce valve leaflet prolapse. The device reduces mitral valve regurgitation.
DESCRIPTION OF DRAWING(S) - The figure shows a progression of the placement of the **girdle** around chordae tendinae.
girdle (120)
push rod (150)
pp; 30 DwgNo 14/23
Derwent Class: A96; B07; P32

International Patent Class (Main): A61F-000/00
Technology Focus:
... Preferred **Method** : The **girdle** is delivered by positioning the catheter proximate to several chordae tendinae of the **heart** valve. The **girdle** is delivered in the lumen of catheter by inserting the catheter percutaneously. The catheter is inserted percutaneously and advanced transluminally to a left **ventricle** through an aortic valve.

22/7,K/4 (Item 4 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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015974222 **Image available**
WPI Acc No: 2004-132063/200413
Actuation system for assisting the **operation** of the natural **heart**, comprises actuator element for indenting portion of **heart** wall, and protective sheath for protecting the **heart** wall portion from damage by the actuator element
Patent Assignee: UNIV CINCINNATI (UYCI-N)
Inventor: MELVIN D B
Number of Countries: 105 Number of Patents: 003
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20040015041	A1	20040122	US 2002197973	A	20020718	200413	B
WO 200408941	A2	20040129	WO 2003US22054	A	20030716	200413	
AU 2003261163	A1	20040209	AU 2003261163	A	20030716	200450	

Priority Applications (No Type Date): US 2002197973 A 20020718
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20040015041	A1		11	A61N-001/362	
WO 200408941	A2	E		A61B-000/00	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW
Designated States (Regional): AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

AU 2003261163	A1	A61N-001/362	Based on patent WO 200408941

Abstract (Basic): US 20040015041 A1
NOVELTY - Actuation system comprises an actuator element (86) for indenting the portion of the **heart** wall to effect a reduction in the volume of the **heart**, and a protective sheath (84) for protecting the **heart** wall portion from damage by the actuator element. The protective sheath is flexible and operable of transmitting a force by the actuator element to the **heart** wall portion to indent the **heart** wall portion.
DETAILED DESCRIPTION - An actuation system comprises an actuator element for extending near a **heart** wall exterior surface and operable for indenting the portion of the **heart** wall to effect a reduction in the volume of the **heart**; and a protective sheath to extend along the **heart** wall between actuator element and **heart** wall portion for protecting the **heart** wall portion from damage by the actuator element. The protective sheath is flexible and operable of transmitting a force by the actuator element to the **heart** wall portion to indent the **heart** wall portion. An INDEPENDENT CLAIM is also included for a **method** for

assisting the **operation** of the natural **heart**, the **method** comprising positioning an actuator element to extend along a portion of a **heart** wall exterior surface; positioning a flexible protective sheath along the **heart** wall between the actuator element and the **heart** wall portion for protecting the **heart** wall portion from damage; indenting the sheath and portion of the **heart** wall to effect a reduction in the volume of the **heart**.

USE - For assisting the **operation** of the natural **heart**.

ADVANTAGE - The inventive system prevents damage to the tissue of the **heart** during **operation**. It provides a long-term actuation and assistance for the **heart** by reducing friction on the **heart** wall from a **heart** wall actuation system.

DESCRIPTION OF DRAWING(S) - The drawing shows a perspective view of the invention on a natural human **heart**.

Human **heart** (10)
Grooves (20, 22)
Yoke (70)
Protective sheath (84)
Actuator element (86)
pp; 11 DwgNo 1A/3

Derwent Class: A96; D22; P34; S05
International Patent Class (Main): A61B-000/00 ; A61N-001/362
Technology Focus:

... Preferred Components: The actuation system further comprises a framework for interfacing with the **heart** and including elements configured for being anchored to the **heart** . The protective sheath is porous and comprises interlocked elements. The interlocked elements form ring-shaped structures. The protective sheath comprises a fabric **jacket** , studs interspersed throughout the fabric and having stud surfaces generally coextensive with surfaces of the...

...assumes a predetermined **shape**and thus indenting the protective sheath and a portion of the **heart** wall to effect a reduction in the volume of the **heart** . The protective sheath is anchored to the framework, or actuator element. The protective sheath is configured for being anchored to tissue of a **heart** . The actuator element is coupled to the framework. Preferred **Method** : The **method** further comprises anchoring a framework to tissue of a natural **heart** and coupling the actuator element to the framework. A protective sheath having a plurality of interlocked rings is positioned along the **heart** wall. Studs are interspersed throughout the fabric and having stud surfaces generally coextensive with surfaces of the fabric. The sheath and the **heart** wall portion are indented by moving the actuator element in a direction generally parallel to...

22/7,K/6 (Item 6 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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015495466 **Image available**
WPI Acc No: 2003-557613/200352
Ventricular dilation treatment **method** for patients, involves **wrapping** **girdle** around **heart** muscle with **ventricle** dilation and maintaining it for certain time so that it decreases in size as dilation decreases
Patent Assignee: ABIOMED INC (ABIO-N)
Inventor: KUNG R T V; LEDERMAN D M; ROSENBERG M
Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20030088151	A1	20030508	US 95490080	A	19950613	200352 B
			US 95581051	A	19951229	
			US 9823592	A	19980213	
			US 98223645	A	19981230	
			US 2002318884	A	20021213	

Priority Applications (No Type Date): US 95581051 A 19951229; US 95490080 A 19950613; US 9823592 A 19980213; US 98223645 A 19981230; US 2002318884 A 20021213

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20030088151	A1		29	A61F-002/02	CIP of application US 95490080 Div ex application US 95581051 Cont of application US 9823592 Cont of application US 98223645 CIP of patent US 5713954 Div ex patent US 5800528 Cont of patent US 6224540 Cont of patent US 6508756

Abstract (Basic): US 20030088151 A1

NOVELTY - The **method** involves **wrapping** a **girdle** around a **heart** muscle having dilation of **ventricle** , according to the size and shape of the muscle. The **girdle** is maintained for a certain period of time. The **girdle** is made of a suitable material and structure such that it does not expand away from the **heart** , instead decreases in size as dilation decreases.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(a) an apparatus for providing passive support to a natural **heart** characterized by **ventricular** dilation

(b) a **method** of generating the interface between the interior of an external **girdle** for a natural **heart** and the myocardium.

USE - Used for treating patients with **ventricular** dilation.

ADVANTAGE - The **girdle** is **wrapped** around the **heart** muscle and avoids direct contact with blood stream, thereby reducing the infection problems caused due to the **girdle** material.

DESCRIPTION OF DRAWING(S) - The drawing shows an illustration in cross-sectional form of the **heart girdle**.

pp; 29 DwgNo 19B/25

Derwent Class: P32

International Patent Class (Main): A61F-002/02

22/7,K/7 (Item 7 from file: 350)

DIALOG(R)File 350:Derwent WPIX

015320493 **Image available**

WPI Acc No: 2003-381428/200336

Cardiac harness for patient's **heart**, has individual modules assembled together to form the **harness**

Patent Assignee: PARACOR **SURGICAL** INC (PARA-N); PARACOR MEDICAL INC (PARA-N); HARTIGAN W (HART-I); LAU L (LAUL-I); PATEL A (PATE-I); LILIP L (LILI-I)

Inventor: HARTIGAN W; LAU L; PATEL A; LILIP L

Number of Countries: 102 Number of Patents: 009

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200322176	A2	20030320	WO 2002US29025	A	20020910	200336 B
US 20030069467	A1	20030410	US 2001322089	P	20010910	200336
			US 2002242016	A	20020910	
US 6723041	B2	20040420	US 2001322089	P	20010910	200427
			US 2002242016	A	20020910	
EP 1424958	A2	20040609	EP 2002770508	A	20020910	200438
			WO 2002US29025	A	20020910	
US 20040143155	A1	20040722	US 2001322089	P	20010910	200449
			US 2002242016	A	20020910	
			US 2004754174	A	20040109	
US 20040143156	A1	20040722	US 2001322089	P	20010910	200449
			US 2002242016	A	20020910	
			US 2004754264	A	20040109	
AU 2002335745	A1	20030324	AU 2002335745	A	20020910	200461
US 20050014992	A1	20050120	US 2001322089	P	20010910	200507
			US 2002242016	A	20020910	
			US 2004754852	A	20040109	
JP 2005501652	W	20050120	WO 2002US29025	A	20020910	200508
			JP 2003526308	A	20020910	

Priority Applications (No Type Date): US 2001322089 P 20010910; US 2002242016 A 20020910; US 2004754174 A 20040109; US 2004754264 A 20040109 ; US 2004754852 A 20040109

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200322176	A2	E	47	A61F-002/00	
	Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW				
	Designated States (Regional): AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW				
US 20030069467	A1			A61N-001/362	Provisional application US 2001322089
US 6723041	B2			A61B-019/00	Provisional application US 2001322089
EP 1424958	A2	E		A61F-002/00	Based on patent WO 200322176
	Designated States (Regional): AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI SK TR				
US 20040143155	A1			A61N-001/362	Provisional application US 2001322089
					Cont of application US 2002242016
					Cont of patent US 6723041
US 20040143156	A1			A61N-001/362	Provisional application US 2001322089
					Cont of application US 2002242016
					Cont of patent US 6723041
AU 2002335745	A1			A61F-002/00	Based on patent WO 200322176
US 20050014992	A1			A61F-002/00	Provisional application US 2001322089
					Cont of application US 2002242016
					Cont of patent US 6723041
JP 2005501652	W		73	A61F-002/02	Based on patent WO 200322176

Abstract (Basic): WO 200322176 A2

NOVELTY - A **cardiac harness** configured to fit about a patient's **heart** (30), comprises individual modules assembled together to form the **harness**.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a **method** of making the **cardiac harness** , comprising providing the

modules; and connecting the modules to one another to form the **harness**.
USE - For a patient's **heart**, or for treating congestive **heart** failure (CHF).
ADVANTAGE - The **harness** prevents a remodeled **heart** from further remodeling and/or helps reverse remodeling of a diseased **heart**. It allows for customization of the **harness** to a particular patient's **heart** size and needs. It can be assembled ex vivo and/or in vivo.
DESCRIPTION OF DRAWING(S) - The figure schematically shows a **cardiac harness** fit loosely about a **heart**.
Heart (30)
First and second edges (112, 114)
Zip coupler (118)
Spring hinge (125)
pp; 47 DwgNo 10/28
Derwent Class: A96; D22; P31; P32; P34
International Patent Class (Main): A61B-019/00 ; A61F-002/00 ; A61F-002/02 ; A61N-001/362

22/7,K/9 (Item 9 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.
014572565 **Image available**
WPI Acc No: 2002-393269/200242
Treating **method** for **cardiac** disease of **heart** involves **surgically** c,losing **access** to **heart** while leaving **jacket** in place on **heart** after **jacket** placed on **heart** is secured and adjusted
Patent Assignee: ALFERNESS C A (ALFE-I); SABBAH H N (SABB-I)
Inventor: ALFERNESS C A; SABBAH H N
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20020042554	A1	20020411	US 2000565041	A	20000504	200242	B

Priority Applications (No Type Date): US 2000565041 A 20000504
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20020042554	A1		14	A61F-002/00	

Abstract (Basic): US 20020042554 A1
NOVELTY - Drug therapy is applied to a **heart** (H) to reduce the size of the **heart** after **surgically accessing** the **heart**. A **jacket** (10) is then placed on the **heart**. The **jacket** is secured to the **heart** after being placed on the **heart**, and adjusted on the **heart** after the drug therapy. The **access** to the **heart** is then **surgically** closed while leaving the **jacket** in place on the **heart**.
DETAILED DESCRIPTION - The **jacket** is adjusted on the **heart** after the drug therapy to snugly conform the **jacket** to the external geometry of **heart** and assume a maximum adjusted volume for **jacket** to constrain peripheral expansion of the **heart** beyond maximum adjusted volume during diastole and permit unimpeded contraction of the **heart** during systole.
USE - For treating **cardiac** disease of **heart**.
ADVANTAGE - Enables treatment of congestive **heart** disease and related **cardiac** complications such as valvular disorders.
DESCRIPTION OF DRAWING(S) - The figure shows the side view of the diseased **heart** in diastole with the **cardiac** constraint device in place.
Jacket (10)
Heart (H)

pp; 14 DwgNo 3A/7
Derwent Class: P32
International Patent Class (Main): A61F-002/00

22/7,K/10 (Item 10 from file: 350)
DIALOG(R)File 350:Derwent WPIX

014509539 **Image available**
WPI Acc No: 2002-330242/200236
Method for placing an endovascular **splint** assembly transverse a **heart** chamber to alter geometry of failing **heart** , involves advancing elongate member, through catheter, through vascular structure and into left **ventricle** of **heart**
Patent Assignee: MYOCOR INC (MYOC-N); MYOCOR (MYOC-N)
Inventor: KEITH P T; MORTIER T J; SCHROEDER R F; SCHWEICH C J; SIMMON M A; VIDLUND R M; KALGREEN J; MORTIER T; SIMMON M
Number of Countries: 098 Number of Patents: 006
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200230335	A2	20020418	WO 2001US30629	A	20011002	200236	B
AU 200194921	A	20020422	AU 200194921	A	20011002	200254	
EP 1322259	A2	20030702	EP 2001975613	A	20011002	200344	
			WO 2001US30629	A	20011002		
US 6616684	B1	20030909	US 2000679550	A	20001006	200361	
US 20030181928	A1	20030925	US 2000679550	A	20001006	200364	
			US 2003410279	A	20030410		
US 20040225304	A1	20041111	US 2000679550	A	20001006	200475	
			US 2003410279	A	20030410		
			US 2003735269	A	20031212		

Priority Applications (No Type Date): US 2000679550 A 20001006; US 2003410279 A 20030410; US 2003735269 A 20031212
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200230335	A2	E	70	A61F-002/24	
Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PH PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW				
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW					
AU 200194921	A			A61F-002/24	Based on patent WO 200230335
EP 1322259	A2	E		A61F-002/24	Based on patent WO 200230335
Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR					
US 6616684	B1			A61B-017/08	
US 20030181928	A1			A61B-017/08	Div ex application US 2000679550
US 20040225304	A1			A61B-017/08	Cont of application US 2000679550
					Cont of application US 2003410279
					Cont of patent US 6616684

Abstract (Basic): WO 200230335 A2
NOVELTY - The **method** involves providing an elongate tension member (200) having a first end and a deployable **heart**-engaging assembly connected to at least the first end. The elongate member is advanced through vascular structure and into the left **ventricle** of the **heart** so that the first end of the elongate member extends through a first

location of a wall surrounding the **heart** chamber and the second end extends through a second location of the **heart** chamber wall, opposite the first.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for: (i) a **splint** assembly including an expandable **heart** engaging assembly formed partially from portions forming the elongate member of the **splint** assembly; and (ii) a delivery tool including a tubular member configured to be advanced through vascular structure and having a curved distal end. The elongate member is advanced through a guide device such as a catheter, endovascularly inserted into the right **ventricle** of the **heart**. Insertion of the catheter involves extending it across the left **ventricle** from the right **ventricle** through the first location on a free wall surrounding the left **ventricle** and through the second location on a septal wall, and stabilizing the catheter w.r.t the left **ventricle** by inflating balloons at a proximal end of the catheter.

USE - For placement of endovascular **splint**ing devices on the **heart** to treat a failing **heart**, including a **heart** having dilated, infarcted, and/or aneurismal tissue, to reduce the radius of curvature and/or alter the geometry or **shape**of the **heart** to reduce **heart** wall stress and improve pumping performance. For treating **heart** conditions such as valve incompetencies including mitral valve leakage.

ADVANTAGE - Enables **splint** placement that is less **invasive** and poses less risk to a patient, both after and during placement.

DESCRIPTION OF DRAWING(S) - The drawing shows a vertical cross-sectional view of the **heart** showing the removal of the delivery catheter from the tension member.

tension member (200)
fixed anchor mechanism (201)
flexible elastic ring (203)
securing band (204)
pp; 70 DwgNo 6/38

Derwent Class: P31; P32
International Patent Class (Main): A61B-017/08 ; A61F-002/24

22/7,K/11 (Item 11 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.
014509528 **Image available**
WPI Acc No: 2002-330231/200236
Methods for improving **heart** valve function use **splints** in varying number and position
Patent Assignee: MYOCOR INC (MYOC-N); KALGREEN J E (KALG-I); MORTIER T J (MORT-I); SCHROEDER R F (SCHR-I); SCHWEICH C J (SCHW-I); VIDLUND R M (VIDL-I)
Inventor: KALGREEN J E; MORTIER T J; SCHROEDER R F; SCHWEICH C J; VIDLUND R M; MORTLER T J
Number of Countries: 097 Number of Patents: 004
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200230292	A1	20020418	WO 2001US30882	A	20011003	200236	B
AU 200196512	A	20020422	AU 200196512	A	20011003	200254	
US 6723038	B1	20040420	US 2000680435	A	20001006	200427	
US 20040152947	A1	20040805	US 2000680435	A	20001006	200452	
			US 2004762513	A	20040123		

Priority Applications (No Type Date): US 2000680435 A 20001006; US 2004762513 A 20040123
Patent Details:
Patent No Kind Lan Pg Main IPC Filing Notes
WO 200230292 A1 E 47 A61B-017/00
Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PH PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW
AU 200196512 A A61B-017/00 Based on patent WO 200230292
US 6723038 B1 A61M-001/12
US 20040152947 A1 A61F-002/02 Cont of application US 2000680435
Cont of patent US 6723038

Abstract (Basic): WO 200230292 A1

NOVELTY - An elongate member is placed across a **heart** chamber. The ends of the member have anchors which fix the ends of the member. The anchors may be external to the chamber to reposition the papillary muscles, or adjacent to the septum. The **shape**of the valve or of the valve annulus may be changed. More than one **splint** may be used.

USE - For improving the function of **heart** valves.

ADVANTAGE - Improves the mitral valve function without the need for cardiopulmonary bypass.

DESCRIPTION OF DRAWING(S) - The diagram shows an external view of a human **heart** showing the orientation of the mitral valve **splints** and series of trans**ventricular splints**.

pp; 47 DwgNo 3b/7

Derwent Class: P31; P32; P34
International Patent Class (Main): A61B-017/00 ; A61F-002/02 ; A61M-001/12

22/7,K/12 (Item 12 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.
014269468 **Image available**
WPI Acc No: 2002-090166/200212

Device for treating **cardiac** disease of **heart**, comprises flexible **jacket** having internal space and non-adherent material which is adapted to secure to **heart** to snugly conform to external geometry of **heart**

Patent Assignee: ACORN CARDIOVASCULAR INC (ACOR-N)
Inventor: COX J E; GIRARD M J; PALME D F; ROHRBAUGH D G; SABBAH H N; SHAPLAND J E; WALSH R G; COX J
Number of Countries: 097 Number of Patents: 006
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200195831	A2	20011220	WO 2001US17959	A	20010604	200212	B
AU 200175177	A	20011224	AU 200175177	A	20010604	200227	
EP 1289446	A2	20030312	EP 2001941857	A	20010604	200320	
			WO 2001US17959	A	20010604		
JP 2004503293	W	20040205	WO 2001US17959	A	20010604	200412	
			JP 2002510016	A	20010604		
US 6730016	B1	20040504	US 2000591875	A	20000612	200430	
US 20050004428	A1	20050106	US 2000591875	A	20000612	200504	
			US 2004839724	A	20040504		

Priority Applications (No Type Date): US 2000591875 A 20000612; US

2004839724 A 20040504
Patent Details:
Patent No Kind Lan Pg Main IPC Filing Notes
WO 200195831 A2 E 55 A61F-002/00
Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW
AU 200175177 A Based on patent WO 200195831
EP 1289446 A2 E A61F-002/00 Based on patent WO 200195831
Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR
JP 2004503293 W 87 A61F-002/02 Based on patent WO 200195831
US 6730016 B1 A61F-002/00
US 20050004428 A1 A61F-002/00 Cont of application US 2000591875
Cont of patent US 6730016

Abstract (Basic): WO 200195831 A2

NOVELTY - A device for treating **cardiac** disease of a **heart** (H) comprises a **jacket** (10) of flexible material having an internal space (16), and a non-adherent material in association with the **jacket**. The **jacket** is adapted to be secured to the **heart** and adjusted on the **heart** to snugly conform to an external geometry of the **heart**.

DETAILED DESCRIPTION - The **heart** has an upper portion (12) and a lower portion (14) divided by an A-V groove. The **jacket** is defined with a maximum adjusted space to constrain expansion of the **heart** beyond a maximum adjusted volume during diastole and permit substantially unimpeded contraction of the **heart** during systole. An INDEPENDENT CLAIM is also included for **method** of treating **cardiac** disease.

USE - For treatment of **cardiac** disease such as cardiomyopathy, valvular insufficiency, arrhythmias, and related **cardiac** complications.

ADVANTAGE - The non-adherent material prevents unwanted fibrosis or adhesion of the **jacket** to the **heart**. The non-adherent material also facilitates removal of the **jacket**, if removal becomes desirable or necessary. The **jacket** is adapted to be adjusted on the **heart** to snugly conform to an external geometry of the **heart** and assume a maximum adjusted volume for the **jacket** to constrain expansion of the **heart** beyond the maximum adjusted volume during diastole and permit substantially unimpeded contraction of the **heart** during systole. The device provides an advantage as controllability of therapeutic agent delivery (including duration of exposure to the agent, dosage and size of the target area to be exposed to the agent), and contact between the therapeutic agent and the target surface that is intimate, long-term, and non-shifting. The device can target delivery of the therapeutic agent to a specific target area on or around the **heart**. If desired, the entire surface of the **heart** can be treated with the agent, or one or more specific areas of the **heart** can be treated. The ability of localizing the therapeutic agent to the target as desired, avoids adverse systemic effects of therapeutic agents to the **heart**. The device maintains a controlled release of the therapeutic agent after implantation of the device, also provides a flexible device for delivery of the therapeutic agent, such that the device maintains intimate contact with the **heart** during delivery of the agent. This intimate, non-shifting contact with the **heart** achieves local delivery

of a therapeutic agent that might otherwise be impossible or at least difficult to deliver as a result of such factors as poor blood flow to the target surface, as a result of ischemia. Because the device delivers the therapeutic agent directly to a localized target surface, lower amounts, but potentially higher localized concentrations, of the therapeutic agent can be delivered. The device can expose the target tissue to more than one type of agent. The therapeutic agent can be delivered to the **heart** or surrounding tissue for a period of from several minutes, to several weeks. The device provides improved capacity to deliver one or more therapeutic agents to one or more selected sites on the **heart** surface. The **jacket** encompasses all or a part of the **heart**, and all or one or more selected areas of the **jacket** can be provided with a delivery source. Delivery of the therapeutic agent is precisely controlled, so that only selected areas are exposed to the agent. The **jacket** is made of a knit bio-compatible material that provides sustained, controlled release of a therapeutic agent to the **heart** or other target tissue.

DESCRIPTION OF DRAWING(S) - The figure shows elevation view of a diseased **heart** in diastole with the device.

Jacket (10)
Upper portion (12)
Lower portion (14)
Internal space (16)
Heart (H)
pp; 55 DwgNo 3A/9

Derwent Class: B07; D22; P32
International Patent Class (Main): A61F-002/00 ; A61F-002/02
International Patent Class (Additional): A61F-013/00 ; A61K-035/12; A61K-045/00; A61P-009/00; A61P-009/04; A61P-009/06

22/7,K/13 (Item 13 from file: 350)
DIALOG(R)File 350:Derwent WPIX

014132135 **Image available**
WPI Acc No: 2001-616346/200171
Splint assembly for treating dilated **heart** chambers and/or improving **cardiac** function, includes elongated member, first and second **heart**-engaging assemblies, and fixation member
Patent Assignee: MYOCOR INC (MYOC-N)
Inventor: KUSZ D A; LAPLANTE J P; MORTIER T J; PAULSON T M; SCHROEDER R F; SCHWEICH C J; VIDLUND R M
Number of Countries: 096 Number of Patents: 007
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200170116	A1	20010927	WO 2001US8892	A	20010320	200171	B
AU 200147602	A	20011003	AU 200147602	A	20010320	200210	
EP 1265534	A1	20021218	EP 2001920566	A	20010320	200301	
			WO 2001US8892	A	20010320		
US 20030050529	A1	20030313	US 2000532049	A	20000321	200321	
			US 2002278847	A	20021024		
US 6537198	B1	20030325	US 2000532049	A	20000321	200325	
EP 1265534	B1	20040602	EP 2001920566	A	20010320	200441	
			WO 2001US8892	A	20010320		
DE 60103618	E	20040708	DE 103618	A	20010320	200445	

EP 2001920566 A 20010320
WO 2001US8892 A 20010320
Priority Applications (No Type Date): US 2000532049 A 20000321; US 2002278847 A 20021024
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200170116	A1	E	62	A61B-017/00	
Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW					
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW					
AU 200147602	A			A61B-017/00	Based on patent WO 200170116
EP 1265534	A1	E		A61B-017/00	Based on patent WO 200170116
Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR					
US 20030050529	A1			A61N-001/362	Cont of application US 2000532049
US 6537198	B1			A61M-031/00	
EP 1265534	B1	E		A61B-017/00	Based on patent WO 200170116
Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR					
DE 60103618	E			A61B-017/00	Based on patent EP 1265534 Based on patent WO 200170116

Abstract (Basic): WO 200170116 A1

NOVELTY - A **splint** assembly (1) consists of an elongated member (2) extending transverse to a **heart** chamber, first and second **heart**-engaging assemblies (3, 4) for respectively engaging first and second exterior locations of a **heart** wall, and a fixation member to penetrate the elongated member to hold the first and/or the second **heart**-engaging assembly in a fixed position along the elongated member.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:

(A) an apparatus for determining and marking a location on a **heart** wall comprising a marker delivery mechanism and an actuator for delivering the marker to the location; and

(B) a tool for fixing an elongated member to a housing comprising an engagement member, a wire, and a handle.

USE - The assembly is used to treat dilated **heart** chambers and/or to improve **cardiac** function. It is also used to treat **heart** failure resulting from aneurysms.

ADVANTAGE - The **splint** assembly is non-pharmacological and passive, and reduces **heart** wall tension by changing the geometry or **shape**and/or the radius of curvature or cross-section of a **heart** chamber. It is easy to manufacture and use, and the related inventive **surgical techniques** and tools for implanting the device do not require **invasive procedures** of current **surgical techniques** . The assembly is also less risky to the patient compared to other **techniques** because it does not require removing portions of **heart** tissue, opening the **heart** chamber, or stopping the **heart** during **operation** .

DESCRIPTION OF DRAWING(S) - The figure is a plan view of the **splint** and a leader assemblies.

Splint assembly (1)
Elongated member (2)
Heart-engaging assemblies (3, 4)
pp; 62 DwgNo 1/14

Derwent Class: A96; D22; P31; P34
International Patent Class (Main): A61B-017/00 ; A61M-031/00; A61N-001/362
International Patent Class (Additional): A61B-017/04 ; A61B-017/12

22/7,K/14 (Item 14 from file: 350)
DIALOG(R)File 350:Derwent WPIX

014066067 **Image available**
WPI Acc No: 2001-550280/200161
Cardiac harness for treating congestive **heart** failure has interconnected elastic bending hinges comprising central portion connected on opposite sides to respective arm portions
Patent Assignee: PARACOR **SURGICAL** INC (PARA-N); PARACOR MEDICAL INC (PARA-N); HARTIGAN B (HART-I); LAU L (LAUL-I)
Inventor: HARTIGAN B; LAU L
Number of Countries: 095 Number of Patents: 022
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200167985	A1	20010920	WO 2001US5017	A	20010216	200161 B
AU 200138383	A	20010924	AU 200138383	A	20010216	200208
US 20020019580	A1	20020214	US 2000188282	P	20000310	200214
			US 2000634043	A	20000808	
			US 2001952145	A	20010910	
US 20020028981	A1	20020307	US 2000188282	P	20000310	200221
			US 2000634043	A	20000808	
			US 2001952116	A	20010910	
US 20020032364	A1	20020314	US 2000188282	P	20000310	200222
			US 2000634043	A	20000808	
			US 2001952081	A	20010910	
US 20020045798	A1	20020418	US 2000188282	P	20000310	200228
			US 2000634043	A	20000808	
			US 2001951923	A	20010910	
US 20020045800	A1	20020418	US 2000188282	P	20000310	200228
			US 2000634043	A	20000808	
			US 2001953493	A	20010914	
US 20020052538	A1	20020502	US 2000188282	P	20000310	200234
			US 2000634043	A	20000808	
			US 2001952774	A	20010914	
EP 1261294	A1	20021204	EP 2001910816	A	20010216	200280
			WO 2001US5017	A	20010216	
US 20030065248	A1	20030403	US 2000188282	P	20000310	200325
			US 2000634043	A	20000808	
			US 2002314696	A	20021209	
US 6602184	B2	20030805	US 2000188282	P	20000310	200353
			US 2000634043	A	20000808	
			US 2001951923	A	20010910	
US 6595912	B2	20030722	US 2000188282	P	20000310	200354
			US 2000634043	A	20000808	
			US 2001953493	A	20010914	
US 6612979	B2	20030902	US 2000188282	P	20000310	200359
			US 2000634043	A	20000808	
			US 2001952774	A	20010914	
JP 2003526448	W	20030909	JP 2001566456	A	20010216	200360
			WO 2001US5017	A	20010216	
US 6663558	B2	20031216	US 2000188282	P	20000310	200407

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                                US 2000634043   A   20000808
                                US 2001952116   A   20010910
US 6682474        B2  20040127  US 2000188282   P   20000310  200408
                                US 2000634043   A   20000808
                                US 2001952081   A   20010910
US 6702732        B1  20040309  US 99171792     P   19991222  200418
                                US 2000188282   P   20000310
                                US 2000634043   A   20000808
US 20040106848    A1  20040603  US 2000188282   P   20000310  200436
                                US 2000634043   A   20000808
                                US 2001952116   A   20010910
                                US 2003693577   A   20031023
US 20040162463    A1  20040819  US 2000188282   P   20000310  200455
                                US 2000634043   A   20000808
                                US 2001952116   A   20010910
                                US 2003714189   A   20031113
US 20040171906    A1  20040902  US 2000188282   P   20000310  200458
                                US 2000634043   A   20000808
                                US 2004788791   A   20040227
US 20040230091    A1  20041118  US 2000188282   P   20000310  200477
                                US 2000634043   A   20000808
                                US 2004788791   A   20040227
                                US 2004865086   A   20040609
US 20050020874    A1  20050127  US 2000188282   P   20000310  200509
                                US 2000634043   A   20000808
                                US 2001952116   A   20010910
                                US 2003705989   A   20031112
Priority Applications (No Type Date): US 2000634043 A 20000808; US
  2000188282 P 20000310; US 2001952145 A 20010910; US 2001952116 A 20010910
  ; US 2001952081 A 20010910; US 2001951923 A 20010910; US 2001953493 A
  20010914; US 2001952774 A 20010914; US 2002314696 A 20021209; US 99171792
  P 19991222; US 2003693577 A 20031023; US 2003714189 A 20031113; US
  2004788791 A 20040227; US 2004865086 A 20040609; US 2003705989 A 20031112
Patent Details:
Patent No  Kind Lan Pg   Main IPC     Filing Notes
WO 200167985  A1 E  97 A61F-002/00
   Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA
   CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP
   KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT
   RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
   Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR
   IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW
AU 200138383  A         A61F-002/00   Based on patent WO 200167985
US 20020019580 A1       A61F-002/00    Provisional application US 2000188282
                                       Cont of application US 2000634043
US 20020028981 A1       A61F-002/00    Provisional application US 2000188282
                                       Cont of application US 2000634043
US 20020032364 A1       A61F-002/00    Provisional application US 2000188282
                                       Cont of application US 2000634043
US 20020045798 A1       A61F-002/00    Provisional application US 2000188282
                                       Cont of application US 2000634043
US 20020045800 A1       A61F-002/00    Provisional application US 2000188282
                                       Cont of application US 2000634043
US 20020052538 A1       A61F-002/00    Provisional application US 2000188282
                                       Cont of application US 2000634043
EP 1261294     A1 E     A61F-002/00   Based on patent WO 200167985
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Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR

US 20030065248	A1		A61F-002/00	Provisional application US 2000188282 Cont of application US 2000634043
US 6602184	B2		A61B-019/00	Provisional application US 2000188282 Cont of application US 2000634043
US 6595912	B2		A61B-019/00	Provisional application US 2000188282 Cont of application US 2000634043
US 6612979	B2		A61B-019/00	Provisional application US 2000188282 Cont of application US 2000634043
JP 2003526448	W	83	A61B-017/00	Based on patent WO 200167985
US 6663558	B2		A61B-019/00	Provisional application US 2000188282 Cont of application US 2000634043
US 6682474	B2		A61F-002/04	Provisional application US 2000188282 Cont of application US 2000634043
US 6702732	B1		A61F-002/04	Provisional application US 99171792 Provisional application US 2000188282
US 20040106848	A1		A61B-019/00	Provisional application US 2000188282 Cont of application US 2000634043 Cont of application US 2001952116 Cont of patent US 6663558 Cont of patent US 6702732
US 20040162463	A1		A61F-002/00	Provisional application US 2000188282 Cont of application US 2000634043 Cont of application US 2001952116 Cont of patent US 6663558 Cont of patent US 6702732
US 20040171906	A1		A61F-002/04	Provisional application US 2000188282 Cont of application US 2000634043 Cont of patent US 6702732
US 20040230091	A1		A61F-013/00	Provisional application US 2000188282 Cont of application US 2000634043 Cont of application US 2004788791 Cont of patent US 6702732
US 20050020874	A1		A61F-002/00	Provisional application US 2000188282 Cont of application US 2000634043 Cont of application US 2001952116 Cont of patent US 6663558 Cont of patent US 6702732

Abstract (Basic): WO 200167985 A1

NOVELTY - The **cardiac harness** (4) has interconnected elastic bending hinge spring elements comprising a central portion connected on opposite sides to respective arm portions. The arm portions interact with the central portion in response to deflection of the arm portions to create a bending moment in the hinge to store potential energy.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for a **method** of assembling the **cardiac harness** .

USE - For treating patient's failing **heart**.

ADVANTAGE - Improves pumping function.

DESCRIPTION OF DRAWING(S) - The drawing shows the **harness** in place on the **heart**.

Harness (4)

pp; 97 DwgNo 1/36

Derwent Class: P31; P32; P34

International Patent Class (Main): A61B-017/00 ; A61B-019/00 ; A61F-002/00 ; A61F-002/04 ; A61F-013/00

International Patent Class (Additional): A61N-001/05; A61N-001/375

22/7,K/15 (Item 15 from file: 350)
DIALOG(R)File 350:Derwent WPIX

013966502 **Image available**
WPI Acc No: 2001-450716/200148
External support apparatus for supporting **heart** valve, has sheath for covering sheath and **girdle** with inflow end adjacent inflow end of **girdle** and outflow end spaced beyond outflow end of stent
Patent Assignee: GABBAY S (GABB-I)
Inventor: GABBAY S
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 6264691	B1	20010724	US 99298493	A	19990423	200148	B

Priority Applications (No Type Date): US 99298493 A 19990423
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6264691	B1		10	A61F-002/24	

Abstract (Basic): US 6264691 B1

NOVELTY - A stent (222) is disposed about the elongated sidewall (208) of a **girdle** (200), intermediate the inflow and outflow ends (204,206) of the **girdle**. A sheath (236) covers the stent and a portion of the **girdle**. The sheath has an inflow end (238) adjacent to the inflow end of the **girdle**, and outflow end (240) spaced axially beyond the outflow end (226) of the stent.

DETAILED DESCRIPTION - The inflow and outflow ends of the elongated sidewall of the **girdle** are spaced apart in axial length, substantially commensurate with the axial length of the valve leaflets of a **heart** valve. The sheath is made of biocompatible material. An INDEPENDENT CLAIM is also included for implanting an autogenous or homogenous **heart** valve disposed within a length of a tubular valve wall.

USE - For supporting **heart** valve disposed within elongated tubular valve wall.

ADVANTAGE - Stabilizes base of the **heart** valve and supports commissures to inhibit inward deflection. Increases durability of the autograft and homograft valve by inhibiting annular dilation and deformities which occur during normal functioning of the **heart** . Promotes coaptation of the leaflets of the autograft and homograft. Reduces failure and need for **reoperation** after **surgical procedures** . Permits transplanted autograft, including **heart** valve and corresponding tubular valve wall to grow with the patient since **girdle** is made of bioabsorbable material.

DESCRIPTION OF DRAWING(S) - The figure shows the external support apparatus for **heart** valve.

Girdle (200)
Inflow and outflow ends of **girdle** (204,206)
Elongated sidewall (208)
Stent (222)
Outflow end of stent (226)
Sheath (236)
Inflow end of sheath (238)
Outflow end of sheath (240)
pp; 10 DwgNo 6/9

Derwent Class: P32
International Patent Class (Main): A61F-002/24

22/7,K/18 (Item 18 from file: 350)
DIALOG(R)File 350:Derwent WPIX

013456037 **Image available**
WPI Acc No: 2000-627980/200060
Method for treating valvular conditions of patient's **heart** by using **cardiac** reinforcement device including synthetic biomedical material having maximum predetermined size
Patent Assignee: ACORN CARDIOVASCULAR INC (ACOR-N)
Inventor: ALFERNESS C A
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6126590	A	20001003	US 96720556	A	19961002	200060 B
			US 97935440	A	19970923	

Priority Applications (No Type Date): US 96720556 A 19961002; US 97935440 A 19970923
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6126590	A		11	A61F-013/00	Cont of application US 96720556 Cont of patent US 5702343

Abstract (Basic): US 6126590 A

NOVELTY - The **method** involves selecting a **cardiac** reinforcement device (40) having a synthetic biomedical material which can be applied to an **epicardial** surface of the **heart** (41) and having a maximum predetermined size. The predetermined size is selected to constrain **cardiac** expansion beyond a predetermined limit. The **cardiac** reinforcement device is applied to the surface of the **heart** a parietal layer of a **pericardium** of the **heart** . The **cardiac** reinforcement device is secured to the surface of the **heart** with the **jacket** adjusted for the internal volume to assume the maximum predetermined size.

DETAILED DESCRIPTION - The synthetic biomedical material has a continuous mesh construction. The mesh construction defining a number of open cells. The synthetic biomedical material is formed into a **jacket** to surround the **heart** with the **jacket** having an internal volume to receive the **heart** . An INDEPENDENT CLAIM is also provided for a **method** of treating **cardiac** disease.

USE - For treating cardiomyopathy or reducing the diastolic volume of the **heart**.

ADVANTAGE - Can reduce or prevent **cardiac** dilation and reduces the problems associated with such dilation.

DESCRIPTION OF DRAWING(S) - The drawing is a perspective view of the **cardiac** reinforcement **jacket** around the **heart**.

Cardiac reinforcement device (40)
Heart (41)
pp; 11 DwgNo 5/8

Derwent Class: P32
International Patent Class (Main): A61F-013/00

22/7,K/19 (Item 19 from file: 350)

DIALOG(R)File 350:Derwent WPIX

013279709 **Image available**
WPI Acc No: 2000-451644/200039
Cardiac constraint device for treating **cardiac heart** disease has flexible **jacket** defining volume between open upper end and lower end, and two electrode grids
Patent Assignee: ACORN CARDIOVASCULAR INC (ACOR-N)
Inventor: ALFERNESS C A; SHAPLAND J E
Number of Countries: 089 Number of Patents: 007
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200028918	A1	20000525	WO 99US18113	A	19990810	200039	B
AU 9953466	A	20000605	AU 9953466	A	19990810	200042	
US 6169922	B1	20010102	US 98195770	A	19981118	200103	
EP 1128780	A1	20010905	EP 99939123	A	19990810	200151	
			WO 99US18113	A	19990810		
US 6370429	B1	20020409	US 98195770	A	19981118	200227	
			US 2000628706	A	20000731		
US 20020103511	A1	20020801	US 98195770	A	19981118	200253	
			US 2000628706	A	20000731		
			US 200260655	A	20020130		
US 6567699	B2	20030520	US 98195770	A	19981118	200336	
			US 2000628706	A	20000731		
			US 200260655	A	20020130		

Priority Applications (No Type Date): US 98195770 A 19981118; US 2000628706 A 20000731; US 200260655 A 20020130
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200028918	A1	E	32	A61F-002/00	
Designated States (National): AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZA ZW					
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ UG ZW					
AU 9953466	A				Based on patent WO 200028918
US 6169922	B1			A61N-001/05	
EP 1128780	A1	E		A61F-002/00	Based on patent WO 200028918
Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI					
US 6370429	B1			A61N-001/39	Cont of application US 98195770
					Cont of patent US 6169922
US 20020103511	A1			A61N-001/39	Cont of application US 98195770
					Cont of application US 2000628706
					Cont of patent US 6169922
					Cont of patent US 6370429
US 6567699	B2			A61N-001/39	Cont of application US 98195770
					Cont of application US 2000628706
					Cont of patent US 6169922
					Cont of patent US 6370429

Abstract (Basic): WO 200028918 A1
NOVELTY - A **cardiac** constraint device with a longitudinal axis from an apex to a base and upper and lower portions divided by an A-V groove comprises a **jacket** of flexible material defining a volume between an open upper end and a lower end; and two electrode grids carried on the

jacket and disposed to be in overlying relation to the opposite sides of the **heart** when the **jacket** is secured to the **heart**.

DETAILED DESCRIPTION - A **cardiac** constraint device for treating **cardiac** **heart** disease having a longitudinal axis from an apex to a base and upper and lower portions divided by an A-V groove comprises a **jacket** of flexible material defining a volume between an open upper end and a lower end; and two electrode grids (100, 100a) carried on the **jacket** and disposed to be in overlying relation to the opposite sides of the **heart** when the **jacket** is secured to the **heart** . The **jacket** is dimensioned for the apex of the **heart** to be inserted into the volume through the open upper end and for the **jacket** to be slipped over the **heart** . It is adapted to be secured to the **heart** with the **jacket** having portions disposed on opposite sides of the **heart** . It is adapted to be adjusted on the **heart** to snugly conform to an external geometry of the **heart** and to constrain circumferential expansion of the **heart** during diastole and permit unimpeded contraction of the **heart** during systole. The two grids are connectable to a source (106) of a defibrillating waveform. The **heart** includes a valvular annulus adjacent the A-V groove and a **ventricular** lower extremities adjacent the apex. An INDEPENDENT CLAIM is also included for a **method** for treating **cardiac** disease of a patient's **heart** , comprising **surgically** **accessing** the patient's **heart** and diaphragm; placing a **jacket** having a biomedical material around the **heart** ; adjusting and securing the **jacket** on the **heart** to snugly conform to the external geometry of the **heart** to constrain circumferential expansion of the **heart** during diastole and permitting unimpeded contraction of the **heart** during systole, and with the two grids in overlying relation to the opposite sides of the **heart** ; and applying a defibrillating electrical waveform to the grids.

USE - For treating **cardiac** **heart** disease.

ADVANTAGE - The invention can also perform defibrillating functions.

DESCRIPTION OF DRAWING(S) - The figure shows a modified device secured to a **heart**.

Open cells (10)
Two electrode grids (100, 100a)
Conductors (101, 101a)
Source (106)
pp; 32 DwgNo 8/9

Derwent Class: A96; D22; P32; P34; S05
International Patent Class (Main): A61F-002/00 ; A61N-001/05; A61N-001/39
International Patent Class (Additional): A61N-001/36

22/7,K/20 (Item 20 from file: 350)
DIALOG(R)File 350:Derwent WPIX

013098633 **Image available**
WPI Acc No: 2000-270505/200023
Transventricular splint implantation method for surgery on a failing heart
Patent Assignee: MYOCOR INC (MYOC-N)
Inventor: KEITH P T; KUSZ D A; MORTIER T J; PAULSON T M; SCHWEICH C J; VIDLUND R M
Number of Countries: 087 Number of Patents: 007
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200006028	A1	20000210	WO 99US16876	A	19990727	200023 B
AU 9952310	A	20000221	AU 9952310	A	19990727	200029
EP 1100378	A1	20010523	EP 99937485	A	19990727	200130
			WO 99US16876	A	19990727	
US 6260552	B1	20010717	US 98123977	A	19980729	200142
US 20010025171	A1	20010927	US 98123977	A	19980729	200159
			US 2001864320	A	20010525	
US 20030032979	A1	20030213	US 98123977	A	19980729	200314
			US 2001864320	A	20010525	
			US 2002191379	A	20020709	
US 6746471	B2	20040608	US 98123977	A	19980729	200437
			US 2001864320	A	20010525	

Priority Applications (No Type Date): US 98123977 A 19980729; US 2001864320 A 20010525; US 2002191379 A 20020709

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200006028	A1	E	89	A61B-017/00	
Designated States (National): AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZA ZW					
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ UG ZW					
AU 9952310	A				Based on patent WO 200006028
EP 1100378	A1	E		A61B-017/00	Based on patent WO 200006028
Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI					
US 6260552	B1			A61B-019/00	
US 20010025171	A1			A61B-017/00	Cont of application US 98123977 Cont of patent US 6260552
US 20030032979	A1			A61B-017/08	Cont of application US 98123977 Cont of application US 2001864320 Cont of patent US 6260552
US 6746471	B2			A61B-017/28	Cont of application US 98123977 Cont of patent US 6260552

Abstract (Basic): WO 200006028 A1

NOVELTY - The **method** involves selecting a **ventricle** location for implanting the **splint** and then advancing two tension members through two sides of the **ventricle** . Anchors are deployed on each tension member and the tension members are then connected within the **heart** . The first tension member may be advanced into the **heart** near the apex and then advanced through the first side.

USE - For reducing **heart** wall stress.

ADVANTAGE - Can reduce stress throughout the **cardiac** cycle.

DESCRIPTION OF DRAWING(S) - The figure is a cross sectional view of the left **ventricle**.

pp; 89 DwgNo 65/81

Derwent Class: P31

International Patent Class (Main): A61B-017/00 ; A61B-017/08 ; A61B-017/28 ; A61B-019/00

International Patent Class (Additional): A61B-017/12

22/7,K/21 (Item 21 from file: 350)

DIALOG(R)File 350:Derwent WPIX

012988964 **Image available**
WPI Acc No: 2000-160817/200014
Device for treating congestive **heart** disease and related valvular dysfunction comprises flexible biologically compatible **jacket**
Patent Assignee: ACORN CARDIOVASCULAR INC (ACOR-N)
Inventor: ALFERNESS C A; POWER J M; RAMAN J S; SABBAH H N
Number of Countries: 087 Number of Patents: 019
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200002500	A1	20000120	WO 99US15737	A	19990712	200014	B
AU 9950974	A	20000201	AU 9950974	A	19990712	200028	
US 6085754	A	20000711	US 98114757	A	19980713	200037	
US 6123662	A	20000926	US 98114510	A	19980713	200051	
EP 1102567	A1	20010530	EP 99935512	A	19990712	200131	
			WO 99US15737	A	19990712		
US 20010029314	A1	20011011	US 98114510	A	19980713	200162	
			US 2000565621	A	20000504		
			US 2001880576	A	20010613		
AU 745832	B	20020411	AU 9950974	A	19990712	200237	
JP 2002520088	W	20020709	WO 99US15737	A	19990712	200259	
			JP 2000558766	A	19990712		
US 20030028077	A1	20030206	US 98114510	A	19980713	200313	
			US 2000565621	A	20000504		
			US 2001880576	A	20010613		
			US 2002251193	A	20020920		
US 6537203	B1	20030325	US 98114510	A	19980713	200325	
			US 2000565621	A	20000504		
US 6582355	B2	20030624	US 98114757	A	19980713	200343	
			US 2000565041	A	20000504		
US 20040171907	A1	20040902	US 98114510	A	19980713	200458	
			US 2000565621	A	20000504		
			US 2001880576	A	20010613		
			US 2002251193	A	20020920		
			US 2004794311	A	20040305		
US 20040171908	A1	20040902	US 98114510	A	19980713	200458	
			US 2000565621	A	20000504		
			US 2001880576	A	20010613		
			US 2002251193	A	20020920		
			US 2004794319	A	20040305		
US 20040181121	A1	20040916	US 98114510	A	19980713	200461	
			US 2000565621	A	20000504		
			US 2001880576	A	20010613		
			US 2004809961	A	20040326		
US 20040181122	A1	20040916	US 98114510	A	19980713	200461	
			US 2000565621	A	20000504		
			US 2001880576	A	20010613		
			US 2004809962	A	20040326		
US 20040181123	A1	20040916	US 98114510	A	19980713	200461	
			US 2000565621	A	20000504		
			US 2001880576	A	20010613		
			US 2004810096	A	20040326		
US 20040181125	A1	20040916	US 98114510	A	19980713	200461	
			US 2000565621	A	20000504		
			US 2001880576	A	20010613		
			US 2004810133	A	20040326		

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EP 1102567      B1  20041110  EP 99935512      A   19990712  200473
                            WO 99US15737     A   19990712
DE 69921826     E   20041216  DE 99621826      A   19990712  200482
                            EP 99935512      A   19990712
                            WO 99US15737     A   19990712
Priority Applications (No Type Date): US 98114757 A 19980713; US 98114510 A
  19980713; US 2000565621 A 20000504; US 2001880576 A 20010613; US
  2002251193 A 20020920; US 2000565041 A 20000504; US 2004794311 A 20040305
  ; US 2004794319 A 20040305; US 2004809961 A 20040326; US 2004809962 A
  20040326; US 2004810096 A 20040326; US 2004810133 A 20040326
Patent Details:
Patent No  Kind Lan Pg   Main IPC    Filing Notes
WO 200002500  A1 E  30 A61F-002/00
   Designated States (National): AE AL AM AT AU AZ BA BB BG BR BY CA CH CN
   CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ
   LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK
   SL TJ TM TR TT UA UG UZ VN YU ZA ZW
   Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR
   IE IT KE LS LU MC MW NL OA PT SD SE SL SZ UG ZW
AU 9950974    A        A61F-002/00   Based on patent WO 200002500
US 6085754    A        A61B-019/00
US 6123662    A        A61F-002/00
EP 1102567    A1 E     A61F-002/00   Based on patent WO 200002500
   Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT
   LI LT LU LV MC MK NL PT RO SE SI
US 20010029314 A1       A61F-002/00   Cont of application US 98114510
                                      Cont of application US 2000565621
                                      Cont of patent US 6123662
AU 745832     B        A61F-002/00   Previous Publ. patent AU 9950974
                                      Based on patent WO 200002500
JP 2002520088 W     37 A61F-002/02   Based on patent WO 200002500
US 20030028077 A1       A61F-002/00   Cont of application US 98114510
                                      Cont of application US 2000565621
                                      Cont of application US 2001880576
                                      Cont of patent US 6123662
US 6537203    B1        A61F-002/00   Cont of application US 98114510
                                      Cont of patent US 6123662
US 6582355    B2        A61F-002/04   Cont of application US 98114757
                                      Cont of patent US 6085754
US 20040171907 A1       A61F-002/00   Cont of application US 98114510
                                      Cont of application US 2000565621
                                      Cont of application US 2001880576
                                      Cont of application US 2002251193
                                      Cont of patent US 6123662
                                      Cont of patent US 6537203
US 20040171908 A1       A61F-002/00   Cont of application US 98114510
                                      Cont of application US 2000565621
                                      Cont of application US 2001880576
                                      Cont of application US 2002251193
                                      Cont of patent US 6123662
                                      Cont of patent US 6537203
US 20040181121 A1       A61F-002/00   Cont of application US 98114510
                                      Cont of application US 2000565621
                                      Cont of application US 2001880576
                                      Cont of patent US 6123662
                                      Cont of patent US 6537203
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US 20040181122 A1 A61F-002/00 Cont of application US 98114510
Cont of application US 2000565621
Cont of application US 2001880576
Cont of patent US 6123662
Cont of patent US 6537203

US 20040181123 A1 A61F-002/00 Cont of application US 98114510
Cont of application US 2000565621
Cont of application US 2001880576
Cont of patent US 6123662
Cont of patent US 6537203

US 20040181125 A1 A61N-001/362 Cont of application US 98114510
Cont of application US 2000565621
Cont of application US 2001880576
Cont of patent US 6123662
Cont of patent US 6537203

EP 1102567 B1 E A61F-002/00 Based on patent WO 200002500
Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

DE 69921826 E A61F-002/00 Based on patent EP 1102567
Based on patent WO 200002500

Abstract (Basic): WO 200002500 A1

NOVELTY - A device for treating **heart** disease comprises a flexible biologically compatible **jacket** which slips over the **heart** and surrounds at least the valvular annulus and the **ventricular** lower extremities of the **heart**. It is adjustable to snugly conform to the **heart** and assume a maximum adjusted volume during diastole and permit unimpeded contraction during systole.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a **method** for treating **cardiac** disease comprising (a) **surgically accessing** a patient's **heart** and diaphragm; (b) placing a **jacket** around the **heart** ; (c) adjusting the **jacket** on the **heart** to ensure that it snugly conforms to an external geometry of the **heart** and assume a maximum adjusted volume during diastole and permit unimpeded contraction during systole; and (d) securing the lower end of the **jacket** to the diaphragm.

USE - For treating congestive **heart** disease and related valvular dysfunction. The device can be used to treat **heart** enlargement due to viral infection. It may be used to constrain the **heart** until viral infection passes. It treats valvular disorders by constraining circumferential enlargement of the valvular annulus and deformation of the **ventricular** walls. It may also be used to reduce **heart** size in addition to preventing further enlargement.

ADVANTAGE - The device constrains further undesirable circumferential enlargement of the **heart** while not impeding other motion of the **heart**. It is a low cost and lower risk alternative to other treatments during both the early and later stage of congestive **heart** disease. It is easy to place, secure and needs only **minimal invasive procedures**.

DESCRIPTION OF DRAWING(S) - A side elevation view of a **cardiac** constraint device.

Jacket (10)
Upper end (12)
Heart (H)
Valvular annulus (VA)
pp; 30 DwgNo 3A/7

Derwent Class: A96; D22; F04; P31; P32; P34

International Patent Class (Main): A61B-019/00 ; A61F-002/00 ; A61F-002/02 ; A61F-002/04 ; A61N-001/362
International Patent Class (Additional): A61F-013/00 ; A61K-045/00; A61P-009/04
Technology Focus:
... Preferred **Method** : Prior to placing the **jacket** on the **heart** , a drug therapy comprising the administration of a positive inotropic agent to reduce the size of the **heart** is applied.

22/7,K/23 (Item 23 from file: 350)
DIALOG(R)File 350:Derwent WPIX

012077694 **Image available**
WPI Acc No: 1998-494605/199842
Method of treating patient with **heart** having **ventricular** dilation - involves use of **girdle** , formed of material and structure that does not expand away from **heart** , which is **wrapped** around **heart** muscle
Patent Assignee: ABIOMED R & D INC (ABIO-N)
Inventor: KUNG R T V; LEDERMAN D M
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 5800528	A	19980901	US 95490080	A	19950613	199842 B
			US 95581051	A	19951229	

Priority Applications (No Type Date): US 95581051 A 19951229; US 95490080 A 19950613
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 5800528	A		9	A61F-002/04	CIP of application US 95490080

Abstract (Basic): US 5800528 A
The **method** for treatment of a patient, whose **heart** is characterized by **ventricular** dilatation comprises the steps of, **wrapping** a **girdle** around at least the **ventricle** of the patient's **heart** . The **girdle** is **wrapped** such that it can adjust in size and **shape**to facilitate a gradual reduction in the size of the **heart** . The **method** then involves maintaining the **girdle** in a passive state for an extended period of time. The **girdle** in the passive state conforms to the outer **shape**of the **ventricle** and does not expand its dimension in a direction away from the natural **heart** .
The **girdle** is formed of a sheet of material prestressed in the plane of the sheet to a value below the elastic limit of the material, the sheet having a tension which limits extension away from the **heart**, while providing compression forces radially inward toward the **heart**.
ADVANTAGE - Improves performance characteristics of the **heart**.
Dwg.1b,4/7
Derwent Class: P32
International Patent Class (Main): A61F-002/04

23/7,K/2 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX

015930811
WPI Acc No: 2004-088652/200409
Cardio therapeutic **heart** sack is prepared from biocompatible, biostable

and implantable elastomers
Patent Assignee: OKUZUMI Y (OKUZ-I); ACORN CARDIOVASCULAR INC (ACOR-N)
Inventor: OKUZUMI Y
Number of Countries: 001 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20020173824	A1	20021121	US 98106960	P	19981104	200409 B
			US 99431605	A	19991101	
US 6587734	B2	20030701	US 98106960	P	19981104	200409
			US 99431605	A	19991101	

Priority Applications (No Type Date): US 98106960 P 19981104; US 99431605 A 19991101
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20020173824	A1		7	A61N-001/39	Provisional application US 98106960
US 6587734	B2			A61N-001/05	Provisional application US 98106960

Abstract (Basic): US 20020173824 A1

NOVELTY - A cardio therapeutic **heart** sack is prepared from biocompatible, biostable and implantable elastomers from polyetherurethane, polycarbonateurethane, silicone, polysiloxaneurethane, polyfluoroethylene, ethylene propylene terpolymer, or hydrogenated poly(styrene-butadiene) copolymer.

DETAILED DESCRIPTION - A cardio therapeutic **heart** sack is prepared from biocompatible, biostable and implantable elastomers from polyetherurethane, polycarbonateurethane, silicone, polysiloxaneurethane, polyfluoroethylene, ethylene propylene terpolymer, or hydrogenated poly(styrene-butadiene) copolymer. It has holes and grooves for the pulmonary artery, aorta, other blood vessels, the pacemaker leads, defibirillation leads or other therapy devices. It has slits to **wrap** around the **heart** and blood vessels. An INDEPENDENT CLAIM is included for a **method** for making semipermeable **heart** sack membrane by coating and drying a **heart** shaped model with appropriate blood vessel features, with a mixture of polyethylene glycol having a molecular weight of 200-5000 with the elastomer solution prepared from the reaction of polytetramethylene ether glycol having a molecular weight of 400-3000 and methylene bis(p-phenylisocyanate) with the molar ratio of 1:1.6:1.9 respectively in N.N' dimethylacetoamide at 50-90degreesC, adding a mixture of ethylene diamine, 1,3 diaminocyclohexane and diethylamine in DMA (1:0.24:0.19 molar ratio respectively) to chain extend to obtain 5-40% solution, and adding 0.001-0.1% of a stabilizer; and after a sufficient thickness is obtained by the repeated coating and drying processes; placing the product in a water bath to leach out the water soluble polyethylene glycol in a water bath to form semipermeable membrane **heart** sack.

USE - For the treatment of cardiomyopathy, hypertrophic cardiomyopathy, tachycardia, bradycardia, **ventricular** fibrillation, or atrial fibrillation.

ADVANTAGE - The **heart** sack of the invention has low coefficient of friction, excellent biocompatibility, and antimicrobial properties.

pp; 7 DwgNo 0/0

Derwent Class: A96; D22; P34; S05
International Patent Class (Main): A61N-001/05; A61N-001/39

29/26,TI/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

(c) 2005 Thomson Derwent. All rts. reserv.
016748189
WPI Acc No: 2005-072467/200508
Advancement of delivery device(s) into left **ventricle** of **heart** to contact and deliver therapy to mitral valve annulus, by advancing steerable guide catheter into left **ventricle** and around at least portion of mitral valve annulus

29/7,K/3 (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.
016394506 **Image available**
WPI Acc No: 2004-552415/200453
Constraining of **heart** to treat congestive **heart** failure comprises **accessing** **pericardial** space, and inserting mesh device into **pericardial** space that conforms to **heart** and adheres **pericardial** sac to myocardial surface
Patent Assignee: GRABEK J R (GRAB-I); HOEY M (HOEY-I)
Inventor: GRABEK J R; HOEY M
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20040138521	A1	20040715	US 2003340232	A	20030110	200453 B

Priority Applications (No Type Date): US 2003340232 A 20030110
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20040138521	A1		8	A61F-002/00	

Abstract (Basic): US 20040138521 A1

NOVELTY - The **heart** is constrained by **accessing** the **pericardial** space and inserting a mesh device (34) into the **pericardial** space that conforms to the **heart** and adheres the **pericardial** sac to the myocardial surface.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a medical device for constraining the motion of the **heart** comprising mesh band for encircling the **heart**.

USE - For constraining the **heart** to treat a congestive **heart** failure.

ADVANTAGE - The invention allows the **heart** to be **accessed** through the **pericardial** space in a **minimally** **invasive** manner. It allows the delivery, formation, or mechanical constraint without the need for open chest **surgery**.

DESCRIPTION OF DRAWING(S) - The figure is a schematic diagram showing the implantation of a **sock** like constraint.

Sheath (22)
Scope (24)
Multi-arm tool (30)
Mesh (34)
Open section (45)
pp; 8 DwgNo 2/5

Derwent Class: A96; B07; D22; P32
International Patent Class (Main): A61F-002/00
International Patent Class (Additional): A61F-013/00

Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
In this paper we report on our early results of **minimally invasive cardiac** valve **surgery** . A series of 6 consecutive patients with valvular disease underwent valve repair and valve replacement via a right parasternal **incision** ; aortic valve replacement 3, mitral valve replacement 1, mitral valve repair 2. There were no intraoperative complications requiring median sternotomy. Five patients had no blood transfusion. There was only one postoperative event; this patient had a sudden massive bleeding from the chest tube after extubation of the endotracheal tube, an immediate re-suture of the aortotomy was performed. The reoperative course was uneventful. **Minimally invasive cardiac surgery** for aortic and mital valves is an excellent option for most patients affected by isolated valvular disease.
Record Date Created: 19990111
Record Date Completed: 19990111

67/7/24 (Item 24 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 2005 The Dialog Corp. All rts. reserv.
12255253 PMID: 9564224
[Minimal cardiac surgery]
Chirurgie cardiaque a minima.
Grenade T
Universite de Liege, Service de Chirurgie cardio-vasculaire.
Revue medicale de Liege (BELGIUM) Feb 1998, 53 (2) p71-6, ISSN 0370-629X Journal Code: 0404317
Publishing Model Print
Document type: Journal Article ; English Abstract
Languages: FRENCH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
In general **surgery**, the aim of new **techniques** is to reduce the length of the skin **incisions** and/or to use endoscopic or laparoscopic instruments. The **cardiac surgery** makes not an exception. During the last two years, the material and the **techniques** are following a progressive evolution. Concerning the **cardiac surgery** of the adult, three **techniques** which are the mini- **incision** or thoracotomy and the **surgery** of the port-**access** are in full evolution. We describe the advantages and disadvantages.
Record Date Created: 19980528
Record Date Completed: 19980528

67/7/27 (Item 27 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 2005 The Dialog Corp. All rts. reserv.
12239079 PMID: 9547448
On the horizon: **minimally invasive cardiac surgery** .
Vitello-Cicciu J; Fitzgerald C; Whalen D
Emergency Department, Boston Medical Center, Massachusetts, USA.
Journal of cardiovascular nursing (UNITED STATES) Apr 1998, 12 (3) p1-16, ISSN 0889-4655 Journal Code: 8703516
Publishing Model Print
Document type: Journal Article; Review; Review, Tutorial

Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
The landscape of **cardiac surgery** is changing. Advances in endoscopic and other instrumentation **procedures** such as port **access**, video instrumentation, and computer-assisted technology are opening new vistas for **cardiac surgery**. On the immediate horizon is **minimally invasive cardiac surgery** , also known as keyhole **surgery** . Imagine a patient not needing a median sternotomy **incision** or cardiopulmonary bypass. This new type of **cardiac surgery** is currently being explored at some **cardiac surgical** centers internationally. This article explores the current state-of-the-art related to **minimally invasive** direct coronary artery bypass **surgery** . The operative **procedure** , implications for perioperative nursing care, likely future technologies, and the research literature on outcomes are also discussed. (31 Refs.)
Record Date Created: 19980526
Record Date Completed: 19980526

67/7/28 (Item 28 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 2005 The Dialog Corp. All rts. reserv.
12151783 PMID: 9456140
Right parasternal **incision** : a uniform **minimally invasive** approach for valve **operations** .
Lazzara R R; Kidwell F E
Division of **Cardiac** Services, St. Charles Medical Center, Bend, Oregon 97701, USA. hsurg@aol.com
Annals of thoracic **surgery** (UNITED STATES) Jan 1998, 65 (1) p271-2, ISSN 0003-4975 Journal Code: 15030100R
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
The right parasternal **incision** can be used for replacing or repairing **cardiac** valves. A specialized retractor system produces excellent exposure and helps avoid groin cannulation. The approach reduces **surgical** dissection and trauma, does not require sacrifice of mammary arteries, prevents rib spreading, avoids sternotomy, reduces the risk of **cardiac** injury at subsequent redo **operations** , and does not require specialized video or **thoracoscopic** equipment.
Record Date Created: 19980225
Record Date Completed: 19980225

67/7/33 (Item 33 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 2005 The Dialog Corp. All rts. reserv.
13312856 PMID: 10085397
Clinical experience with **minimally invasive** coronary artery and mitral valve **surgery** with the advantage of cardiopulmonary bypass and cardioplegic arrest using the Port **Access technique** .
Gulielmos V; Wagner F M; Waetzig B; Solowjowa N; Tugtekin S M; Schroeder C; Schueler S
Cardiovascular Institute, University of Dresden, Fetscherstrasse 76, D-01307 Dresden, Germany.
World journal of **surgery** (UNITED STATES) May 1999, 23 (5) p480-5,

ISSN 0364-2313 Journal Code: 7704052
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
To minimize **surgical** trauma, the use of Port **Access cardiac surgery** was initiated in patients (pts) with coronary artery disease (CAD) (42 pts) or mitral valve disease (MVD) (24 pts) in March 1996 at our institution. Altogether 42 pts (36 men, 6 women; age 31-75 years, median 59.0 years) with isolated lesions of the left anterior descending (LAD) artery underwent Port **Access** coronary artery **surgery** (PACAS). A small (5-9 cm) **incision** was done parasternally on top on the fourth rib. The left internal mammary artery (LIMA) was dissected through the minithoracotomy or by using an additional **thoracoscopic** approach. A total of 24 pts (12 men, 12 women; age 30-75 years, median 62 years) underwent Port **Access** mitral valve **surgery** (PAMVS). In these pts the **procedure** was performed through a small right thoracotomy (6-8 cm). In all cases, endovascular cardiopulmonary bypass (CPB) was instituted through femoral cannulation, and an additional endoaortic balloon catheter was introduced into the ascending aorta for aortic occlusion. In pts with PACAS the survival was 98% (41/42) and in the PAMVS group 100%. All pts but one survived the PACAS and are well today. There were no deaths in the PAMVS group. The hospital stay was reduced by 1 day on average after PACAS and 3 days after PAMVS. Thus in well selected patients Port **Access cardiac surgery** represents a safe and feasible **minimally invasive surgical** approach that avoids the potential complications of a sternotomy while offering the advantages and safety of CPB and cardioplegic arrest. This **minimally invasive** approach offers a shortened hospital stay and earlier rehabilitation.
Record Date Created: 19990616
Record Date Completed: 19990616

67/7/34 (Item 34 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 2005 The Dialog Corp. All rts. reserv.
13302859 PMID: 10077393
Minimal access aortic valve **surgery** .
Olin C L; Peterffy A
Department of Cardiothoracic **Surgery**, Linkoping **Heart** Center, University Hospital, Sweden. christian.olin@thx.us.lio.se
European journal of cardio-thoracic **surgery** - official journal of the European Association for Cardio-thoracic **Surgery** (NETHERLANDS) Jan 1999, 15 Suppl 1 pS32-8; discussion S39-43, ISSN 1010-7940 Journal Code: 8804069
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
OBJECTIVE: We report our experience with **minimal access** aortic valve **surgery** and discuss the three approaches used. **METHODS** : From June 1996 to October 1997, 18 patients underwent **minimally invasive** aortic valve **surgery** through three different **incisions** : right parasternal minithoracotomy (three cases), upper ministernotomy (11 cases), and transverse sternotomy (four cases). No special **surgical** instrumentation was used. Aortic valve replacement was carried out in 17 patients and aortic

valve repair in one patient. The patients ranged in age from 42 to 86 years (mean 64 years). Concomitant **procedures** involving the aortic root and the ascending aorta were performed in five patients. RESULTS: There was no mortality and no complications related to the **procedure** or the **access**. There was no instability or paradoxical movement of the chest wall. One patient was reoperated for postoperative bleeding. All patients were discharged from hospital within the usual time. No attempts were made to discharge them earlier, even if they recovered quickly. CONCLUSIONS: Of the three **incisions** used, the upper ministernotomy seemed to be the safest and easiest to perform. Through this **incision** , both the aorta and the right atrium could be cannulated, the right **ventricle** was **access**ible, and concomitant **procedures** on the ascending aorta could be carried out. The drawback of **minimal access** aortic valve **surgery** in general is that it is difficult to de-air the **heart** and more difficult to master intra- and postoperative complications should they occur.
Record Date Created: 19990427
Record Date Completed: 19990427

67/7/35 (Item 35 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 2005 The Dialog Corp. All rts. reserv.
13022684 PMID: 10980861
Is **minimal**ly **invasive heart** valve **surgery** a paradigm for the future?
Gillinov A M; Banbury M K; Cosgrove D M
Department of Thoracic and Cardiovascular **Surgery**/F25, The Cleveland Clinic Foundation, 9500 Euclid Avenue, Cleveland, OH 44195, USA.
Current cardiology reports (UNITED STATES) Nov 1999, 1 (4) p318-22, ISSN 1523-3782 Journal Code: 100888969
Publishing Model Print
Document type: Journal Article; Review; Review, Tutorial
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
During the past 5 years, there has been considerable progress in the development of less **invasive techniques** for **heart** valve **surgery**. Both aortic and mitral valve **surgery** can now be performed through small chest wall **incisions** . Recent evidence confirms patient benefit with **minimal**ly **invasive heart** valve **surgery** . Although several approaches can be used, a partial upper sternotomy offers several advantages for **minimal**ly **invasive heart** valve **surgery** . (38 Refs.)
Record Date Created: 20001214
Record Date Completed: 20001214

67/7/39 (Item 39 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 2005 The Dialog Corp. All rts. reserv.
12635533 PMID: 10553539
[**Minimal**ly **invasive surgery** for single valvular **heart** disease]
Takeda M; Konishi T; Fukata M; Matsuzaki K; Furuya K
Division of Cardiovascular **Surgery**, Yokohama Rosai Hospital.
Journal of cardiology (JAPAN) Oct 1999, 34 (4) p219-23, ISSN 0914-5087 Journal Code: 8804703
Publishing Model Print
Document type: Case Reports; Journal Article ; English Abstract
Languages: JAPANESE
Main Citation Owner: NLM

Record type: MEDLINE; Completed
Two patients underwent valve **surgery** using the **minimally invasive** approach. A 51-year-old man underwent mitral valve repair for chronic mitral regurgitation due to prolapse of the posterior mitral leaflet. The left-half of his sternum was **cut** in "C" **shape**below the level of the second intercostal space, and all of the arterial or venous cannulas were inserted via this single **access**. A 37-year-old man underwent aortic valve replacement for aortic valve regurgitation due to infective endocarditis. Right upper partial sternotomy between the first and fourth intercostal space was selected for this aortic valve **surgery** . The median skin **incisions** were as small as 12 and 9 cm. Postoperative recovery was very smooth. **Minimally** **invasive** approach using selected partial sternotomy provides acceptable results with a good exposure, and is an alternative approach to valve **surgery** .
Record Date Created: 20000204
Record Date Completed: 20000204

67/7/40 (Item 40 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 2005 The Dialog Corp. All rts. reserv.
12624246 PMID: 10543561
Comparison of direct aortic and femoral cannulation for port-**access** **cardiac** **operations**.
Glower D D; Clements F M; Debruijn N P; Stafford-Smith M; Davis R D; Landolfo K P; Smith P K
Department of **Surgery**, Duke University Medical Center, Durham, North Carolina 27710, USA. glowe001@mc.duke.edu
Annals of thoracic **surgery** (UNITED STATES) Oct 1999, 68 (4) p1529-31 , ISSN 0003-4975 Journal Code: 15030100R
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
BACKGROUND: Differences in outcome after direct aortic cannulation (AORT) in the chest versus standard femoral arterial cannulation (FEM) have not been defined for **minimally** **invasive** **cardiac** **operations** utilizing the port-**access** approach. **METHODS** : A retrospective study was performed of 165 patients undergoing port-**access** **cardiac** mitral valve **operation** (n = 126) or coronary artery bypass grafting (n = 39). In 113 patients, FEM was used, while in 52 patients, AORT was accomplished through a port in the first intercostal space. RESULTS: AORT eliminated endoaortic balloon clamp migration (0/36 [0%] vs. 17/95 [18%]), and groin wound or femoral arterial complications (0/52 [0%] vs. 11/113 [10%]) without changing **procedure** times (363+/-55 vs. 355+/-70 minutes). Complications attributable to AORT were injury to the right internal mammary artery and aortic cannulation site bleeding in 1 patient each. CONCLUSIONS: Direct aortic cannulation is technically easy, allows use of an endoaortic clamp, and avoids aorto-iliac arterial disease, the groin **incision** , and possible femoral arterial injury associated with femoral arterial cannulation. Direct arterial cannulation should expand the pool of patients eligible for port-**access** **operation** , and may become the standard for port-**access** **procedures** .
Record Date Created: 19991109
Record Date Completed: 19991109

67/7/42 (Item 42 from file: 155)

DIALOG(R)File 155:MEDLINE(R)
(c) format only 2005 The Dialog Corp. All rts. reserv.
13182141 PMID: 11204388
Minimally invasive video-assisted mitral valve **surgery** : from Port-**Access** towards a totally endoscopic **procedure** .
Vanermen H; Farhat F; Wellens F; De Geest R; Degrieck I; Van Praet F; Vermeulen Y
Department of Thoracic and Cardiovascular **Surgery**, Onze-Lieve-Vrouw Ziekenhuis, Aalst, Belgium. hugo.vanermen@olvz-aalst.be
Journal of **cardiac surgery** (United States) Jan-Feb 2000, 15 (1) p51-60, ISSN 0886-0440 Journal Code: 8908809
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
Right thoracotomy is an alternative to mid-sternotomy for left atrium **access**. The Port-**Access** approach is an option that reduces the skin **incision** and obviates rib spreading. PATIENTS AND **METHODS**: From February 1997 until November 1999, 121 patients underwent mitral valve **surgery** through a right antero-lateral thoracotomy using the **Heart**port cardiopulmonary bypass (CPB) system. Mean age was 60 years (31-84). Most patients had normal ejection fractions and were in NYHA Class II or III. Seventy-five patients had valve repair (62%) and 46 (38%) had valve replacement. Pathologies were myxoid (n = 80), rheumatic (n = 30), chronic endocarditis (n = 5), annular dilatation (n = 3), sclerotic (n = 1), ingrowing myxoma (n = 1), and one closure of a paravalvular leak. RESULTS: Two patients had conversion to sternotomy for aortic dissection (one died) with the Endo-Aortic Clamp, and two others for peripheral vascular problems. One patient died at postoperative day 1 after re**operation** for failed repair, another with double valve **surgery** on postoperative day 4 after two revisions for bleeding. Twelve underwent revision for bleeding (10%). Three had prolonged ICU stay for respiratory insufficiency. Two late valve replacements for endocarditis occurred. Echographic control revealed residual insufficiencies (grade 1-2) in two valvular repairs. There were neither paravalvular leaks nor myocardial infarcts. There were no cerebrovascular accidents due to embolic phenomena. Mean ICU and hospital stay were 2.1 and 8.7 days, with a major difference between the first 30 patients and those who followed. CONCLUSION: Port-**Access** mitral valve **surgery** can be a valid alternative to conventional sternotomy and seems to be an important improvement in **minimally invasive cardiac surgery** .
Record Date Created: 20010131
Record Date Completed: 20010510

67/7/44 (Item 44 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 2005 The Dialog Corp. All rts. reserv.
13182138 PMID: 11204384
Minimally invasive direct **access heart** valve **surgery** .
Byrne J G; Hsin M K; Adams D H; Aklog L; Aranki S F; Couper G S; Rizzo R J; Cohn L H
Division of **Cardiac Surgery**, Brigham and Women's Hospital, Boston, Massachusetts 02115,USA. JGBYRNE@BICS.BWH.HARVARD.EDU
Journal of **cardiac surgery** (United States) Jan-Feb 2000, 15 (1) p21-34, ISSN 0886-0440 Journal Code: 8908809
Publishing Model Print

Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
We review our experience with **minimally invasive** direct **access** (MIDA) **heart** valve **surgery** in 518 patients. Two hundred fifty-two patients underwent MIDA aortic valve replacement (AVR) or repair and 266 underwent MIDA mitral valve repair or replacement. Among the 250 AVRs, 157 (63%) were men, aged 63.2 +/- 14.6 years, NYHA functional Class 2.4 +/- 0.8. The **surgical** approach was right parasternal in 36 (14%) or upper hemisternotomy in 216 (86%). There were four (2%) operative deaths. Perioperative complications included 14 (5.6%) reexplorations for bleeding, 7 (3%) chest wound infections, 5 (2%) strokes, and 1 (0.4%) external iliac vein injury. Follow-up was complete in 193 (77%) patients, with a mean follow-up of 12 +/- 8 months. Late complications included 2 (0.8%) nonfatal myocardial infarctions, 4 (2%) **reoperations** for, respectively, 2 **pericardial** complications, 1 paravalvar leak, and 1 infected valve. There were five (2%) late deaths from congestive **heart** failure, pneumonia, hemorrhage, aneurysm, and cancer. Mean follow-up NYHA Class was 1.4 +/- 0.6. For the 266 mitral patients, 145 (54.5%) were men, age 58.7 +/- 13.6 years, functional Class 2.3 +/- 0.5. The **surgical** approach was right parasternal in 195 (73%), lower hemisternotomy in 53 (20%), right submammary thoracotomy in 9 (3.4%), or full sternotomy through a small skin **incision** in 9 (3.4%). There were 2 (0.8%) operative deaths. Perioperative complications included 4 (1.5%) **reoperations** for bleeding, 4 (1.5%) strokes, and 5 (2%) wound infections, and 3 (1%) ascending aortic complications. Follow-up was complete in 202 (76%) patients with a mean follow-up of 9.5 +/- 6.4 months. Late complications included one (0.4%) nonfatal myocardial infarction and three (1%) **reoperations** all converting repairs to replacements. There were three (1%) late deaths from suicide, pneumonia, and sudden death, respectively. Mean follow-up NYHA functional Class was 1.3 +/- 0.5. We conclude that MIDA **heart** valve **surgery** is safe and effective for the majority of patients requiring isolated elective aortic or mitral valve **surgery** .
Record Date Created: 20010131
Record Date Completed: 20010510

67/7/52 (Item 52 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 2005 The Dialog Corp. All rts. reserv.
13003516 PMID: 10963145
Current approaches to **minimally invasive** aortic valve **surgery** .
Estrera A L; Reardon M J
Division of Cardiothoracic **Surgery**, Baylor College of Medicine, Houston, Texas 77030, USA.
Current opinion in cardiology (UNITED STATES) Mar 2000, 15 (2) p91-5 , ISSN 0268-4705 Journal Code: 8608087
Publishing Model Print
Document type: Journal Article; Review; Review, Tutorial
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
Minimally invasive as it applies to aortic valve **surgery** refers to the exposure required to perform the aortic **procedure** , because total cardiopulmonary bypass is still required. Initial experience used the anterior thoracotomy, but recent series report the ministernotomy or "J"

incision as the preferred **technique** for exposure. Though pain, blood loss, and length of stay may not be significantly different when compared with the conventional **technique** , lower costs and earlier recovery may be achieved. **Minimally** **invasive** aortic valve **surgery** is a **technique** that is still evolving. (20 Refs.)
Record Date Created: 20001204
Record Date Completed: 20001228

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File 149:TGG Health&Wellness DB(SM) 1976-2005/Mar W1
         (c) 2005 The Gale Group
File  16:Gale Group PROMT(R) 1990-2005/Mar 17
         (c) 2005 The Gale Group
File 160:Gale Group PROMT(R) 1972-1989
         (c) 1999 The Gale Group
File 148:Gale Group Trade & Industry DB 1976-2005/Mar 17
         (c)2005 The Gale Group
File 636:Gale Group Newsletter DB(TM) 1987-2005/Mar 17
         (c) 2005 The Gale Group
File 370:Science 1996-1999/Jul W3
         (c) 1999 AAAS
File 441:ESPICOM Pharm&Med DEVICE NEWS 2005/Feb W2
         (c) 2005 ESPICOM Bus.Intell.
File  20:Dialog Global Reporter 1997-2005/Mar 17
         (c) 2005 The Dialog Corp.
Set     Items   Description
S1    1445687   CARDIAC OR HEART OR PERICARDI?? OR EPICARDI?? OR VENTRICLE?
              ? OR VENTRICULAR
S2     291261   JACKET? ? OR HARNESS OR HARNESSES OR SHAPE()CHANGE()DEVICE? ?
S3     323356   SOCK? ? OR GIRDLE? ? OR WRAP? ? OR SPLINT? ?
S4      19923   INCISION? ? OR INCISE? ? OR INCISING
S5    4180604   CUT OR CUTS OR CUTTING
S6      31427   MINIMALLY()INVASIVE OR MINIMAL()ACCESS OR THORACOSCOPIC
S7     473455   SURGERY OR SURGERIES
S8    7983720   OPERATION? ?
S9    2092371   PROCEDURE? ?
S10   1142641   TECHNIQUE? ?
S11   1678860   METHOD? ?
S12        12   MINIMAL()SURGICAL()PROCEDURE? ?
S13       344   S1(3N)S2:S3
S14         9   S13(S)S4:S5
S15      7872   S6(1W)S7:S8
S16      8475   S6(1W)S9:S11
S17         0   S13(S)(S12 OR S15 OR S16) NOT S14
S18         8   RD S14 (unique items)[not relevant]
S19        63   S1()S2:S3
S20         1   S4:S5(S)S19
S21        14   S19 AND (S12 OR S15 OR S16 OR S4 OR S5)
S22        13   S21 NOT S14
S23        12   RD (unique items)
S24        12   Sort S23/ALL/PD,A

 24/3,K/1     (Item 1 from file: 149)
DIALOG(R)File 149:TGG Health&Wellness DB(SM)
(c) 2005 The Gale Group. All rts. reserv.
01150459     SUPPLIER NUMBER: 06859766    (USE FORMAT 7 OR 9 FOR FULL TEXT)
Taking skeletal muscle to heart.
Weiss, Rick
Science News, v134, n21, p334(2)
Nov 19,
1988
PUBLICATION FORMAT: Magazine/Journal   ISSN: 0036-8423  LANGUAGE: English
RECORD TYPE: Fulltext  TARGET AUDIENCE: Academic; Consumer
WORD COUNT:   1476    LINE COUNT:  00145
...     skeletal muscle to do things that we'd never expect cardiac muscle
```

to do. We **cut** off the blood supply let it dry out and expect it to function well."

But...

...they splice into the circulatory system to act as auxiliary pumps.

Researchers have performed the **heart - wrap technique** on approximately 30 patients in five countries, according to Juan Carlos Chachques of the...Researchers experimenting with skeletal-muscle **ventricles**, or SMVs, face many of the same problems their **heart - wrap** colleagues do, and a few more. Their approach to **cardiac** assistance is to add to...

24/3,K/2 (Item 2 from file: 149)
DIALOG(R)File 149:TGG Health&Wellness DB(SM)

01301464 SUPPLIER NUMBER: 11001545 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Cardiac myoplasty with the latissimus dorsi muscle. (editorial)
The Lancet, v337, n8754, p1383(2)
June 8,
1991
DOCUMENT TYPE: editorial PUBLICATION FORMAT: Magazine/Journal ISSN: 0099-5355 LANGUAGE: English RECORD TYPE: Fulltext; Abstract
TARGET AUDIENCE: Professional
WORD COUNT: 1129 LINE COUNT: 00121
... to provide diastolic counterpulsation. [7,14] Clinical experience so far relates to use of the **ventricular wrap technique**, usually called cardiomyoplasty.

A serious drawback of the **technique** is that the muscle cannot...

...type of **surgery**. The three major **surgical** groups mobilise the latissimus dorsi through a lateral **incision** , at which time the pacing electrodes are positioned and the programmable burst stimulator is implanted...

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File 155:MEDLINE(R) 1951-2005/Mar W2
         (c) format only 2005 The Dialog Corp.
File   5:Biosis Previews(R) 1969-2005/Mar W2
         (c) 2005 BIOSIS
File  73:EMBASE 1974-2005/Mar W2
         (c) 2005 Elsevier Science B.V.
File  94:JICST-EPlus 1985-2005/Feb W1
         (c)2005 Japan Science and Tech Corp(JST)
File 144:Pascal 1973-2005/Mar W1
         (c) 2005 INIST/CNRS
Set      Items   Description
S1     2426205   HEART OR PERICARDIUM OR EPICARDIUM OR VENTRICLE
S2      111095   INCISION? ? OR INCISE? ? OR INCISING
S3      306177   CUT OR CUTS OR CUTTING
S4      527152   AROUND
S5     2691395   OVER
S6      518419   COVER???
S7      278080   SURROUND???
S8        4324   ENCASE? ? OR ENCASING
S9      223078   JACKET? ? OR HARNESS OR HARNESSES OR SOCK? ? OR GIRDLE? ? -
              OR WRAP? OR SPLINT? ? OR CONSTRAINT? ?
S10       1380   GIRDLING
S11          5   CARDIAC BINDING
S12    2268155   BINDING
S13       5132   (S4:S7 OR S10 OR S12)(1W)S1
S14         47   S2:S3 AND S13
S15          4   S9 AND S14
S16          1   RD (unique items)
S17          0   S2:S3 AND S11
S18          0   S14 NOT S14
S19         43   S14 NOT S15
S20         32   RD (unique items)
S21          6   S20/2001:2005
S22         26   S20 NOT S21
S23         26   Sort S22/ALL/PY,A
S24        240   S2:S3 AND (S1 OR CARDIAC) AND (S10 OR S12)
S25          0   S9 AND S24
S26         66   (S10/TI OR S12/TI) AND S24
S27         37   S1/TI,DE AND S26
S28         37   S27 NOT S14
S29         24   RD (unique items)
S30         10   S29/2001:2005
S31         24   S29 NOT S10
S32         24   Sort S31/ALL/PY,A [not relevant]
S33          5   S11 NOT (S10 OR S29)
S34          4   RD (unique items)

16/3,K/1     (Item 1 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 2005 The Dialog Corp. All rts. reserv.
11252403   PMID: 8561540
  Association of latissimus dorsi muscle expansion with electrostimulation
before cardiomyoplasty.
  Chachques J C; Tapia M; Radermercker M; Pellerin M; Fuzellier J F; Tolan
M J; Renard X; Mitz V; Carpentier A F
  Department of Cardiovascular Surgery, Broussais Hospital, Paris, France.
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Annals of thoracic surgery (UNITED STATES) Jan 1996, 61 (1) p138-42, ISSN 0003-4975 Journal Code: 15030100R
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
BACKGROUND. The principle of cardiomyoplasty is chronic electrostimulation of the latissimus dorsi muscle (LDM) flap **wrapped** **around** the **heart** to obtain a phasic activity that can be integrated to ventricular kinetics. In clinical cardiomyoplasty procedures, a complete **wrap** of both **ventricles** by the LDM cannot always be obtained in cases of extremely dilated **hearts**. This is due to the limited LDM length available for **wrapping** . In most of these cases, benefits of cardiomyoplasty are very limited. We have investigated the...
... with two incorporated muscular pacing electrodes was inserted deep into the LDM through a paravertebral **incision** along the posterior edge of the muscle. The pacing leads were connected to a myostimulator...
... 2 patients, 2 months before cardiomyoplasty. Cardiomyoplasties were performed without difficulty, and a complete biventricular **wrap** was obtained in both patients in spite of massive cardiomegaly.

23/3,K/10 (Item 10 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 2005 The Dialog Corp. All rts. reserv.
09169312 PMID: 2241389
Surgical epicardial ablation of left ventricular pathway using sling exposure.
Guiraudon G M; Klein G J; Yee R; Kaushik R; McLellan D G; Cade D M
University of Western Ontario, London, Canada.
Annals of thoracic surgery (UNITED STATES) Dec 1990, 50 (6) p968-71, ISSN 0003-4975 Journal Code: 15030100R
Publishing Model Print; Comment in Ann Thorac Surg. 1990 Dec;50(6) 866-7; Comment in PMID 2241377
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
... **heart** cephalad and to the right using a sling made of a large sponge passed **around** the **ventricle** through the transverse sinus. While the arterial pressure is monitored, the **heart** is positioned to...
... ventricular function. The left atrioventricular junction is exposed using a direct approach. The **epicardium** is **incised** along the ventricular edge and a plane of dissection is identified and opened using blunt...

23/3,K/13 (Item 13 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 2005 The Dialog Corp. All rts. reserv.
10269261 PMID: 7689203
Total pectoral implantation: a new technique for implantation of transvenous defibrillator lead systems and implantable cardioverter defibrillator.
Camunas J; Mehta D; Ip J; Pe E; Gomes J A
Electrophysiology and Electrocardiography Section, Mt. Sinai Medical

Center, New York, New York 10029.
Pacing and clinical electrophysiology - PACE (UNITED STATES) Jul 1993, 16 (7 Pt 1) p1380-5, ISSN 0147-8389 Journal Code: 7803944
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
... failure to obtain satisfactory thresholds, a small intercostal thoracotomy was performed via the same skin **incision** and patch placed **over** the **epicardium** instead of submuscular position and used with the right atrial spring electrode. The device was...

23/3,K/20 (Item 20 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 2005 The Dialog Corp. All rts. reserv.
12373527 PMID: 9686794
Reoperative MIDCAB grafting: 3-year clinical experience.
Doty J R; Salazar J D; Fonger J D; Walinsky P L; Sussman M S; Salomon N W
Division of **Cardiac** Surgery, Johns Hopkins and Sinai Hospital of Baltimore, MD 21287, USA.
European journal of cardio-thoracic surgery - official journal of the European Association for Cardio-thoracic Surgery (NETHERLANDS) Jun 1998, 13 (6) p641-9, ISSN 1010-7940 Journal Code: 8804069

Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
... vision without sternotomy or cardiopulmonary bypass. The technique is used in reoperative patients through various **incisions** to revascularize one or two areas of the **heart**. The internal mammary artery, gastroepiploic artery...
... thoracotomy. Inferior coronary targets are grafted with the gastroepiploic artery via a small midline epigastric **incision** . Lateral coronary targets are grafted with radial artery or saphenous vein via a posterior thoracotomy...
; Adult; Aged; Aged, 80 and **over** ; **Heart** Catheterization; Humans; Length of Stay; Middle Aged; Postoperative Complications; Reoperation; Surgical Procedures, Minimally Invasive; Treatment...

23/3,K/21 (Item 21 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 2005 The Dialog Corp. All rts. reserv.
12151783 PMID: 9456140
Right parasternal **incision** : a uniform minimally invasive approach for valve operations.
Lazzara R R; Kidwell F E
Division of **Cardiac** Services, St. Charles Medical Center, Bend, Oregon 97701, USA. hsurg@aol.com
Annals of thoracic surgery (UNITED STATES) Jan 1998, 65 (1) p271-2, ISSN 0003-4975 Journal Code: 15030100R
Publishing Model Print